

The Higher Learning in India

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Introduction

The University has become one of the key institutions in Indian society. It is at the centre of social conflict and the topic of heated debate. It is expected to perform a variety of services to society despite the fact that many of society's demands are contradictory or simply impossible to fulfil. For example, higher education is expected to provide social mobility to an increasingly large segment of the population while at the same time preserve its air of exclusiveness. It is expected to inculcate a commitment to modernization and secularism while functioning in a traditional and sometimes communal setting. University autonomy is held as a value at the same time that extra-academic forces of all kinds are influencing universities. "Education" is discussed as an abstract concept while a large number of students simply cram for examinations. These are but a few of the major issues which are crucial to any discussion of Indian higher education.

The Indian university has undergone many critical changes in the post-Independence period, yet it has not altered its basic structure or ethos. Like so much else in Indian society, change has occurred without plan or guidance. The growth in the number of colleges and in student enrolments is perhaps the most important single aspect. The expanded social base of the student population is also important. In addition, the language issue, diversification

of the curriculum, and other factors add to the nature and complexity of the change.

This book stems from an effort to understand the Indian university in a state of flux and a desire to focus attention on some of the critical issues. This volume is by no means comprehensive, although we have tried to deal with the major challenges to Indian higher education. We have, in addition, attempted to use specific and concrete data in an effort to provide accurate analysis and to go beyond what is often overly general and sometimes fruitless discussion. If we have stimulated thought and provided an analytical focus to a discussion of one of India's most pressing problems, then a valuable service has been performed. It is necessary, of course, to move beyond the discussion of this and other studies and to influence the direction of higher education. But it is critically important that those concerned with policy making and planning in the Indian university, from the Ministry of Education to the smallest college, be informed by facts and figures. Planning and administration, in short, must take place in the context of data and serious analysis.

II

The essays in this volume speak for themselves, and we will make no effort to "integrate" the research findings and discussions reported here. We wish, however, to place this volume in the context of the crisis of Indian higher education. The basic nature of this crisis is evident to everyone who works in Indian colleges and universities. Its dimensions have been adequately summarized in the *Report of the Education Commission, 1964-66* and elsewhere. It is our purpose here to point to some of the most critical aspects of the current situation. The essays in this volume discuss many of these issues, but the all-important task of coherently searching for solutions, and then systematically implementing them, remains to be done.

The most serious problem facing Indian higher education is that of size. With enrolments now at more than 30 lakhs and having tripled in a decade, adequate funding, supervision, and control over the new colleges and universities is impossible. Many of the more than 3,500 colleges are located far from adequate libraries and beyond the effective control of the universities to

which they are ostensibly affiliated. The growth rate of Indian higher education has been more than 10 per cent annually for a decade. The increase in numbers at all levels and in practically all institutions has had major implications for the higher educational system and for the nation as a whole.

One of the major implications of the increase in size and the nature of that increase is that effective control over the university system is very difficult if not impossible. The university system is ostensibly subject to controls from many sources but it is highly significant that none of these has been able to implement plans or impose limitations on the higher educational system. State governments, the University Grants Commission, the authorities of the individual universities, and various other agencies have all been basically either unwilling or unable to control the colleges. Some aspects of higher education have become political, others are profit-making, while still others hold to traditional educational values. The reason for the growth of higher education as well as for the circumspection of the government with regard to limiting growth is that higher education has become a commodity much in demand in India. Large sections of the middle class and even of the peasantry and other groups feel that a college degree (at the minimum) is the key to social mobility and success. The fact that a very significant proportion of degree holders is without work or is underemployed has not limited public pressure for the expansion of universities.

Expansion has had many implications. For one thing, there are not sufficient financial resources to support an ever-expanding higher educational system. This has meant that facilities are often inadequate and overcrowded, that libraries are small and laboratories rudimentary, and that, in general, colleges and even universities are unable to provide the basic physical necessities for quality education. The rapid expansion has meant that the quality of the teaching profession has declined to quite an extent. Salaries for college teachers have not kept pace with other professions, and as a result few of the more able graduates enter teaching. The general pauperization of the colleges has also meant a decline in the social standing of the academic profession and has caused further difficulties in recruiting adequate and suitably trained staff.

The growth of the student population has meant that the nature

of the Indian student has changed. The student community is no longer homogenous but rather comes from diverse social strata although a majority is still from the urban middle class. The uncertainties of employment after graduation have also caused a change in the attitude of the students. Students from families with no tradition of higher education and often with a history of illiteracy now flock to colleges. These students understand few of the traditional roots of Indian higher education, and are interested primarily in obtaining a degree which they hope will provide the basis for upward social mobility or at least a decent job in an urban area. The sense of community which once characterized the student population no longer exists, and a commitment to the values of education is absent in many students.

Change in student attitudes toward education is not only the result of a changing social base of the student population, but to a decline in standards in many institutions. Students perceive themselves as locked into a rigid bureaucratic system in which the quality of instruction is often low and the incentives for serious study and critical thinking are missing. The curriculum has changed only slightly and in many cases overcrowding and a lack of adequately trained staff has reduced the quality of the classroom experience. Thus, many of the internal causes of student "indiscipline" are rooted in the expansion of the university system and the changes which this expansion has engendered.

One of the most direct results of the expansion of higher education and the unwillingness of the system to change very much is the current state of the examination system. Many observers have placed the examination system, which requires students to memorize large amounts of material of questionable relevance and which removes the professor from direct control over his students, at the centre of the current crisis of the system. It is highly significant that despite the fact that many have criticized the examination system and some have advocated its complete abolition, it has changed very little. The prevalence of "unfair means" and other violations of academic norms is a graphic indication that the system is not working satisfactorily and that there is massive dissatisfaction with it.

The examination system is an excellent example of the difficulty of change in the Indian context. The entire system is firmly entrenched in the universities and provides many teachers with

additional income as examiners, invigilators and superintendents. Furthermore, most administrators and many others have, in the face of continuing growth, turned to the examination system as one of the few remaining mechanisms to maintain even a minimum standard. Conferences, recommendations, studies, and the best intentions of enlightened academics have not been able to budge the system. It is, moreover, unlikely that major change will take place in the present academic and political context of the universities.

Another flashpoint of academic controversy has been the language issue. Violence, destruction of property, and even loss of life has resulted from disputes over the language question and its relation to higher education. The Madras anti-Hindi agitation of 1965 was carried out by university students for the most part, and students have participated in other similar struggles. The universities themselves have been subjected to massive pressures concerning the medium of instruction, and have taken different stands on the issue. Many of the northern Indian universities have shifted to Hindi, the regional language, as the medium of instruction. Other institutions have resisted strong government pressure for a regionalization of universities. The metropolitan universities like Bombay, Delhi, Calcutta, and Madras have maintained English as a main medium of instruction despite pressure.

In general, the decisions concerning the medium of instruction have been made on the basis of outside political and other pressure rather than on solid academic grounds, regardless of the merits of the various alternatives. Few institutions have carefully studied the implications of linguistic change and few have bothered to ascertain student opinions, have looked into the availability of textbooks in regional languages, or have made other investigations. When pressures are too great, then the university gives in and makes whatever changes are demanded on this issue while maintaining the *status quo* in other aspects of academic life. Political pressure, student demands, and other forces have helped to force a shift in the medium of instruction in many universities. There are many valid arguments for the use of regional languages in higher education, and it is not our purpose to argue for one or another policy here. The point is that the decisions concerning this critical issue have been made largely on the basis of non-academic criteria.

We have only alluded to a few of the challenges facing Indian

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figures found in reports issued by individual universities, the University Grants Commission, and the Ministry of Education. All of this would be of only academic interest if it did not have major implications for the planning process and for understanding one of India's most important social institutions.

Without adequate research, serious planning is impossible since plans must be made on the basis of factual documentation and scholarly analysis. Facts are often simply unavailable to planners, academic officials, and others concerned with higher education. Thus, decisions are made without an adequate basis in facts, and sometimes with detrimental results for the educational system. It can be convincingly argued that funds spent on research concerning higher education would be handsomely rewarded in terms of more accurate planning and more enlightened policy making. The whole discussion of matters related to higher education would, it is hoped, be substantially raised by a more adequate, factual and interpretative research base.

This volume deals with some of the key areas of research and indicates some of the gaps in existing knowledge. We will, however, list here some of the important areas of knowledge which are particularly in need of research and analysis. Scholars and others may be convinced to undertake studies on one or another of these topics.

(1) *Additional statistical data.* Not only is it necessary to have accurate statistics concerning enrolments, numbers of institutions, etc., but information should be made available concerning teachers in higher education. At present, some of the statistical data concerning Indian higher education are contradictory, and there are gaps in the available material. Simple facts concerning all aspects of the university system are needed as a first step toward more detailed and sophisticated analysis. It might be noted, however, that India is far ahead of most developing countries in data collection on higher education.

(2) *Language media and higher education.* Studies concerning the effectiveness of various languages in higher education, analyses of various experiments with linguistic change, problems of such changes, the difficulties of producing textbooks and other ancillary materials, are all necessary in this field.

higher education here. The other essays in this volume deal with many more problems. It has been our purpose simply to point to a few of the more important problems, and to indicate that many of these issues are both complex and interrelated. Again, it is our belief that educators and others must understand the nature of the problems and the scope of its solution prior to major academic reform.

III

One of the most urgent needs in Indian higher education is for research and for comprehensive planning based on adequate facts and documentation. This volume is an effort to fill the "research gap" by presenting some data-based studies which may form the substance for planning related to specific problems. But this book is only a beginning, and it is hoped that others will undertake scholarly research on aspects of Indian higher education.

The reasons for the lack of research on Indian higher education are not difficult to understand. Studies of schools and colleges have traditionally been left to professional educators, and these individuals have not been greatly interested in basic research. What is more, teacher training colleges and related institutions have not been noted for their high quality, and this has further limited the scope and quality of research undertaken. Indian academics, somewhat like their counterparts elsewhere, have not been anxious to expose their own universities to careful scrutiny, preferring to observe primitive tribes or the industrial working class. It might be added that India is not alone in its absence of good data on higher education, since many other countries have only undertaken research on universities in recent years, and particularly since the rise of militant student movements. Few well trained social scientists have undertaken research on the university, or on other aspects of Indian society related to higher education.

The ignorance about basic aspects of Indian higher education is substantial. Little is known about the teaching profession, about the student community, or about the nature of academic administration. No one has investigated the impact of linguistic change in higher education, and few studies have been undertaken on the impact of recent expansion. Even basic statistical data is often missing or inaccurate—we have noted discrepancies between

students. Academic institutions, if they are to effectively educate their students, and in fact if they are to survive in a period of increasing student militance, must understand their students, and begin to deal constructively with their problems. Attitude surveys of student needs, studies of the conditions of activism, and of the physical, psychological, and academic problems facing students are all important.

This list of some key research topics by no means exhausts the field, and is meant to suggest that there are broad areas in which research needs to be conducted. Given the state of the research data now available, almost anything would be useful. However, it is hoped that research of a high quality will be forthcoming from our scholars and academics in the near future. One of the most significant aspects of the Indian academic scene is the lack of interest in academic planning and reform among members of the academic profession.—It is only through an involvement of the academic community with government officials and others that the nature of research and planning can be improved.

IV

One last word about the genesis and scheme of the book. This book was conceived in 1969-70 when one of the editors, Amrik Singh, went on a visiting assignment to the Department of Educational Policy Studies at the University of Wisconsin. As a result of discussion between the two editors, it was decided to prepare a book which should offer a rigorous and critical analysis of the problems of higher education in India. Instead of making the analysis personal, the editors decided to invite a number of leading economists, sociologists, scientists, political scientists and administrators to contribute from their respective angles to this volume. The scheme of contributions was so devised as to project more than one point of view. This was thought necessary because the problems are so complex that no one individual, however able or incisive, would be able to analyse the issues in all their many-sidedness.

That the volume has been several years in the making has been the result of several factors, not the least of them being the inability of the editors to collaborate very actively from a distance of

(3) *The nature of the academic enterprise.* Studies of the actual functioning of universities are especially rare in India. Research on academic administration, the political relationships of universities, interaction between various elements of the academic community, and other aspects are all quite important.

(4) *The academic man.* Studies of the nature of professors in India, their incomes, social backgrounds, attitudes, and other aspects have seldom been made. It is clear that the college teacher is a key element in the academic equation and perhaps the key to the improvement of quality and it is therefore clear that he must be understood. In addition, questions concerning the social recruitment of teachers, their status, problems, and aspirations are all crucial to understanding an academic institution.

(5) *The university and society.* The role of government, politicians, and interest groups in the affairs of universities is crucial. The politics of higher education is especially important, perhaps especially in the Indian context.

(6) *Academic planning.* Careful studies based on economic and other considerations of the needs of higher education and the responsibility of those needs to the available resources are urgently needed. Such studies would have to combine such social science fields as economics, sociology, and political science in order to present a coherent picture.

(7) *University reform.* Studies of such key elements of Indian university life as the examination system, the affiliating nature of universities, student policies, the structure of university governance, and other aspects are crucial if changes are to be made in the areas most frequently criticized.

(8) *The economics of higher education.* In India especially it is important to discern the needs for trained manpower and to adjust university enrolments accordingly. Such studies would make it possible for universities to save valuable resources as well as to help prevent the overproduction of skilled manpower. Such studies would more accurately articulate the university to the needs of society and the economy.

(9) *Student problems and activism.* Although universities are primarily engaged in serving students, very little attention has been given to the problems and attitudes of university

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several thousand miles. One positive outcome of this collaboration however has been the inclusion of a number of contributions by some of the leading American observers of the Indian educational scene. This, it is not too much to say, has added another dimension to the analytical qualities of the book.

The purpose of this volume is to provide relevant facts and interpretations in an effort to stimulate both research and reform. The editors, while committed to serious scholarship and objective evaluation, are also highly critical of many aspects of the Indian university scene. The book, therefore, is not value-neutral. It is implicitly committed to reform and change. The problems of implementation of change are immense, and it is perhaps for this reason that few of the essays confront the politics and strategies of change directly. The editors, alas, have no ready blueprint, nor is it even clear in every case just where to begin. Yet the need for change is evident and the involvement of the academic community in providing both the factual and analytical base for reform on the one hand and the impetus for change on the other is urgent. It is to this goal that this volume is dedicated:

AMRIK SINGH
, PHILIP G. ALTBACH

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The Constitutional Framework

M. S. RAMAMURTHY

The constitution which India has given to herself is so detailed that it has probably no parallel in the world. This constitution is 'federal' in its nature (the word 'federal' however does not occur even once anywhere in this lengthy document). As in other federal constitutions of the world, state power has been divided between the centre (Union) and the states (Units). The first list (Union List) contains 97 items over which the centre alone has legislative jurisdiction. List II (State List) contains 66 items over which the states have exclusive legislative jurisdiction. List III or the Concurrent List contains 47 items over each of which both the centre and the states can exercise their legislative jurisdiction. However, where there is a conflict of laws in this 'Concurrent field' the laws made by the Union prevail over those promulgated by the states. The relevant entries in so far as 'education' is concerned are as follows:

LIST I (UNION LIST)

Entry 63: The institutions known at the commencement of this Constitution as the Banaras Hindu University, the Aligarh Muslim University and the Delhi University, and any other institution declared by Parliament by law to be an institution of national importance.

Entry 64: Institutions for scientific or technical education

powers for certain aspects of education as given in the Union List.

Before examining the nature and evolution of the entries it would be significant to observe that the federal form of government was accepted without question. The Constituent Assembly, which deliberated for over two years in framing the Constitution, paid very little attention to the theoretical and other fundamental issues required for a federal form of government. As Professor D.R. Gadgil observed in 1948, "There has not been a sufficient discussion of first principles or any attempt to lay down the theoretic foundations of the constitutional structure either in the proceedings of the Constituent Assembly or in the press or public during or after the work of the Assembly."

Constitutional history, since 1833, reveals how in the nurturing of British oriented education the role of the central government has undergone many vicissitudes. In the Charter Act of 1833 education was a 'Central' subject inasmuch as all executive, financial and legislative authority was vested in the centre. In 1870, administrative reforms introduced by Lord Mayo gave the provinces a certain amount of control. The Government of India Act of 1919 virtually transferred 'education' to the provinces. This position continued in the 1935 Act also, but the central government had a bigger role to play under the provisions of this Act. For example, the Central Advisory Board of Education, originally constituted in 1920 and dissolved around 1923, was revived in 1935. Similarly, the Central Bureau of Education was revived in 1937. The relevant entries of the 1935 Act are given below:

LIST I

Item 12: Federal agencies and institutes for the following purposes that is to say, for research, for professional or technical training, or for the promotion of special studies.

Item 13: The Banaras Hindu University and the Aligarh Muslim University.

LIST II

Item 17: Education including universities other than specified in paragraph 13 of List I.

The position in the 1949 Constitution has already been given. A comparison between the two shows that there are more entries

financed by the Government of India wholly or in part and declared by Parliament by law to be institutions of national importance.

Entry 65: Union agencies and institutions for (a) professional, vocational or technical training, including the training of police officers; or (b) the promotion of special studies or research; or (c) scientific or technical assistance in the investigation or detection of crime.

Entry 66: Coordination and determination of standards in institutions for higher education or research and scientific and technical institutions.

LIST II (STATE LIST)

Entry 11: Education including universities subject to the provisions of entries 63, 64, 65 and 66 of List I and entry 25 of List III.

LIST III (CONCURRENT LIST)

Entry 20: Economic and social planning.

Entry 25: Vocational and technical training of labour.

Other articles in Parts III and IV of the Constitution which are also relevant to the field of education are Articles 15, 19, 26, 28, 29, 30, 41 and 45. Articles 41 and 45 are contained in Part IV of the Constitution which lists the 'Directive Principles of State Policy'. These directive principles, modelled on the Irish constitution, are not justiciable. But "the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws" (Article 37). The articles in Part III of the Constitution are considered as 'Fundamental Rights' and therefore violations of these by governmental agencies are subject to review by the judiciary. These articles deal with non-discrimination on the basis of religion, race, caste, sex, etc; right to freedom of speech, movement, etc; right to manage religious affairs and freedom as to attendance at religious instruction or religious worship in educational institutions, etc; protection of educational and cultural interests of minorities.

Broadly speaking, education as such has been left to the jurisdiction of the units, i.e. the states. But the centre has also assumed

fact, even when entry 20 of List III was being discussed in the Constituent Assembly, an amendment was moved to include the word 'educational', but Dr. Ambedkar, who was piloting the Constitution, did not accept it as he felt that "social" would include "educational".

In April 1948, Maulana Abul Kalam Azad, who was the Central Minister for Education, in a letter to the members of the Drafting Committee, pointed out that the future development of the country would depend on the quality of the human material. Against this background he proposed two amendments:

(1) All public and private educational and cultural organisations in the Indian Union shall be subject to the supervision of the Union Government in accordance with law.

(2) Expenses for education, sciences and culture shall not be less than 15 per cent of the total budget estimates in the case of Central Government, not less than 25 per cent of the total budget estimates in the case of State Governments and not less than 35 per cent of the total budget estimates in the case of local authorities.

He believed that "in the present state of development of education in India it is imperative there should be Central guidance, if not Central control, on Provincial progress If it can be secured that education throughout India follows the same general pattern, we can be sure that the intelligentsia of the country will be thinking on similar lines."

While these amendments were being incorporated in the draft Constitution to be debated in the Constituent Assembly, in June 1949 the Constitution framers decided to adjourn the Assembly for about a month in order to consult the central and state ministries about the controversial proposals. At that time the Central Ministry of Education proposed the following for incorporation in the Union List:

(1) The Banaras Hindu University, the Aligarh Muslim University and the Delhi University and any other university declared by or under law made by Parliament to be an institution of national importance.

(2) Institutions for scientific or technical education financed

now. Further, the role of the Central Government, especially in the field of higher education, has enlarged. This evolution has largely been the result of the intervention of the Central Ministry of Education.

II

The Constituent Assembly appointed several committees to deal with specific matters which would figure in the Constitution. One such committee was the Union Powers Committee. In its first report submitted in April 1947 there was no specific reference to universities. In June 1947 the University Grants Committee of the Department of Education sent a letter to B.N. Rau, the Constitutional Adviser, presumably after some personal discussions, in which two points were made. The first was that "the Delhi, the Aligarh Muslim and the Banaras Hindu Universities may continue to remain Central or Union subjects under the direct control of the Union." The second point was: "A further subject which may be brought under the powers of the Union, and which the Union Powers Committee may perhaps consider at their meeting of the 30th instant, is 'the Coordinated Development of University Education'. This latter subject could perhaps be placed on the joint list, since it is, within limits, a Provincial subject also." The letter further went on to say that "there has not been time to convene a special meeting of the University Grants Committee for the purpose of putting up a formal memorandum" As will be noticed later, these observations are significant.

K. M. Munshi, a member of the Drafting Committee, submitted a memorandum in which he proposed that the entry "colleges, schools, libraries, museums, memorials, universities *conducted by or maintained out of funds of the Union or in the Union areas*" (emphasis ours) be included in the Union List. However, at the joint meeting of the Union Powers and Union Constitution committees held in the beginning of July 1947, Munshi suggested a new entry: 'Coordination of Research and Higher Education' for inclusion in the Concurrent List. This was rejected by a majority vote. The argument was that the entry 'economic and social planning' which figured in the Concurrent List was "comprehensive enough to cover this". In

40A (which correspond to entries 63 and 64 of the Constitution) indicate that there were two conflicting trends. One was that the centre should not seek to control education. The other view was that education ought to be under the charge of the central government. To illustrate, Naziruddin Ahmad wanted deletion of the words "and Delhi University and any other University declared by or under law made by Parliament to be an institution of national importance." He pointed out that "by virtue of these words the Union Government will be enabled at any time to acquire jurisdiction over one institution or another of a similar kind. In fact, from a university, a college or school down to a small village school, anything may be claimed as within the jurisdiction of the Centre." He also pointed out that the words 'any other institution declared by Parliament by law...' may mean an institution "which is not even educational". This would be curtailing the jurisdiction of the states. H.V. Kamath pleaded for deletion of the words "and any other institution declared by Parliament by law to be an institution of national importance." He pointed out that this power is sought to be taken by the Union even though the institution concerned is not financed by the centre.

On the other hand, Brajeshwar Prasad moved that entry 40 should read: "All universities, advanced scientific research institutes and public and private educational and cultural organizations in the Indian Union shall be subject to the supervision, superintendence, direction and control of the Union Government." He based his argument on the fact that the states did not have adequate financial resources for fulfilling their obligations. He further felt that "for the sake of uniformity, for the sake of the rapid development of our education, this subject should be vested in the hands of the Centre."

Replying to these debates, Dr. Ambedkar justified the inclusion of Delhi University in entry 40 saying that this entry merely took note of an existing situation. As regards powers over institutions which may be declared by law to be institutions of national importance, he felt it was better to retain the words "because there might be institutions which are of such importance from a cultural or from a national point of view and whose financial position may not be as sound as the position of any other institution and may require the help and assistance of the Centre." Entries 40 and 40A were passed as proposed and thus came to be included as such in

by the Government of India wholly or in part and declared by Parliament by law to be institutions of national importance.

(3) Supervisory control of post-secondary educational, scientific and technical institutions in so far such control by the Union is declared by Parliament by law to be necessary for the purpose of coordination and maintenance of standards.

Delhi University came to be added to Banaras Hindu and Aligarh Muslim universities simply because it was located in the Union Territory. Control for purposes of coordination was sought perhaps because the Minister had proposed some such thing in his letter to the Constituent Assembly. The evolution of the entries so far sketched out clearly shows how the Central Ministry alone had a say in the formulation of these entries.

Only a short step was required to be taken to arrive at the wordings in the present entries from those noted above. And that step came to be taken as a result of the discussions which the members of the Drafting Committee had with the premiers of the provinces in July 1949.

In this meeting, Govind Ballabh Pant, premier of United Provinces, opposed the inclusion of the entry in the Union List conferring power on the centre for supervisory control of post-secondary education, etc. He pointed out that it would not be correct to place this supervisory power in the centre while all expenditure was to be met by the states. The general opinion however was in favour of the centre having a say in the maintenance of standards. Jawaharlal Nehru made a forceful plea for vesting the centre with some such power if only to "check the growing tendency towards a lowering of the standards of university education which was already discernible in certain parts of the country". The premier of Mysore State, K.C. Reddy, however, did not see anything to which exception could be taken except for the fact that the words "supervisory control" may mean also administrative control. Ultimately, the meeting agreed to the centre having a say in the "coordination and maintenance of standards".

And, when the entry was introduced for discussions in the Constituent Assembly, the word 'maintenance' was changed to 'determination'. Thus a decision largely at a political level was taken for getting this entry into the Union List.

The debates in the Constituent Assembly on draft entries 40 and

to provide greater resources to the states. He further argued that if education was being transferred to the centre because of its national importance, "then practically every sphere of activity at present entrusted to the provinces would be transferred to the Centre. Medicine is of national importance, hygiene is of national importance and practically all social services which are at present in the domain of the provinces will have to be transferred to the Centre." In his opinion, the entry as it stood "would come in the way of experiments in the educational field in the research field." He said that there should be no direct attempt by the centre to lay down standards and that it would be difficult for Parliament to determine the 'standards' to be maintained.

Dr. P.S. Deshmukh also felt that without agreeing to treat at least higher education as a concern of the Union, it would be difficult to coordinate and determine standards. He said that since this function is not linked to any central financial assistance, the centre had no right to interfere with the autonomous functioning of universities. But if assistance was to be given "nobody or any institution will be foolish enough or will be bold enough or would be careless enough in its own interests to defy the Centre's advice because of the financial assistance that it received from the Centre." He characterized this entry as "hopelessly ill-conceived" and "an infructuous brainwave resulting probably from the heavy work that the Drafting Committee members are required to do." Quite strong words to use in the debates of the august Constituent Assembly. But as observed earlier, a political settlement had already been arrived at which could not be upset at this stage.

While the previous speakers were opposed to the entry being included, Basanta Kumar Das proposed the following amendment:

57A: Promotion of scientific research and of higher and technological education.

57B: Coordination of educational activities of the States for the purpose of maintaining a uniform national educational policy.

57C: Provision of adequate financial assistance to the States for proper development of education and maintenance of uniform standard of education throughout the Union.

the Constitution. It will be seen that the main argument for the centre having a say in educational matters was based on lack of financial resources in the states to meet their obligations. The opponents of central control seem to have felt that the states will have no powers at all if 'education' also was taken over by the centre.

Opposition to draft entries does not seem to have been supported by any views from outside the Assembly. This situation could have changed had only professional men outside the Assembly—universities, educationists, etc. been more vocal. However, that does not seem to have happened.

These two points, viz. (1) resources and (2) the need for maintaining the balance of power between the centre and the states, touch only the surface of the issues involved. There are other and more significant facets to the problem. For example, the primary consideration ought to have been whether education should be viewed as a national endeavour with a national perspective and outlook or whether there was a need and room for regional and local diversities to meet regional and local requirements. Of course, such an examination ought to have been within the framework and philosophy of education and its fundamental structure. That no such examination was done is one thing. But another unfortunate element which is discernible to any reader of the Constituent Assembly debates is the fact that even those arguments which were advanced by the members do not seem to have been listened to with respect by the Drafting Committee members. The interjections of H. V. Kamath and Dr. P.S. Deshmukh will bear out this statement.

Turning now to the new entry 57A of the draft, corresponding to entry 66 of the Constitution, the premise from which all discussions started seems to have been that having allowed education to stay in the State List there was no need for the centre to take powers for the "coordination and maintenance of standards". Votaries of state power naturally opposed this entry as an unnecessary interference on the part of the centre. V.S. Sarwate moved that the words "coordination and maintenance" should be substituted by the words "promotion by financial assistance or otherwise". He pointed out that if the reason for including education in the Union List was the states' lack of financial resources the answer would be not to transfer the item to the Union List but

semantics. These were precisely the motions through which T. T. Krishnamachari went through when he replied to the discussions in the Assembly.

III

The extensive quotations from the debates of the Constituent Assembly given in the foregoing section clearly show that at the time of framing of the Constitution it was realized that the entries were not well worded and might lead to a dichotomy in the field of legislative competence in respect of education. In fact, as Dr. P. S. Deshmukh pointed out in the course of the debates, what was being incorporated in the lists to the Seventh Schedule of the Constitution were not items over which the centre or the states, as the case may be, could exercise powers but items over which they could respectively exercise their legislative jurisdiction. The disregard for this subtle distinction has had a curious effect, outlined below, on the expansion of facilities for higher education.

Apart from legislative competence over the Aligarh Muslim, Banaras Hindu and Delhi universities, the centre has acquired powers to declare institutions as of 'national importance' and thereby acquire powers to legislate in respect of them. Thus five Indian Institutes of Technology have been vested with powers of granting degrees by virtue of this entry. Not merely that. These institutes have become institutions set up by an Act of Parliament and as such are answerable to the Union. Thus there are 'State Universities', 'Central Universities' and also 'Institutions of National Importance'.

The most potent of all entries in respect of education in the Union List is entry 66. While a fuller analysis of this entry will follow later, for the purpose of assessing the impact of the constitutional provision on development of higher education it would be relevant to note that the U.G.C. Act of 1956 was passed as a consequence of and in terms of this entry. And, flowing from Section 3 of the U. G. C. Act, the central government has acquired powers to notify an institution as "deemed to be university" on the advice of the U.G.C. This is yet another category of institutions having degree granting status. And in this category, institutions which were set up a long time ago for fulfilling certain specific purposes or on account of certain ideas which were then

This amendment was more definite and indicative of the action needed on the part of the centre in the field. And to that extent it was more precise.

The operative word in 57A above is 'promotion'. In 57B the power for evolving a "uniform national educational policy" was sought to be vested in the centre and for discharging this responsibility the centre was further vested with the power of "coordination of educational activities of the States... ." In 57C the centre was duty bound to provide financial assistance to the states. There were clear, precise and definite roles assigned to the centre and to that extent these entries were certainly an improvement over the original draft entry. Further, it has the great merit of viewing education as a whole and not as different divisions like school education and higher education.

The shrewd pilot of the Constitution, Dr. Ambedkar, pointed out how there were other articles which would enable the centre to give grants to the states. The arguments of the members were stretched to show that linking finances with powers was unnecessary, though this was precisely what he did when entry 40 and 40A were being discussed. This was ingenuous but he carried the day. As regards the justification for such an entry in the Union List he made out: (1) standards ought to be maintained on an all-India basis; (2) different universities ought not to be allowed to prescribe different standards (actually he illustrated the point with reference to the difference which was, and still is, to be found in the minimum marks for a pass prescribed by different universities); (3) results of technical and scientific institutes should not be permitted to deteriorate from the normal standard and yet allow them to be recognized.

Basanta Kumar Das withdrew his amendment and the present entry 66 got into the Constitution.

Once List I was settled the die had been cast. Draft entry 18 of the State List, corresponding to entry 11 of the present Constitution and entry 17 of the 1935 Constitution, did not prove difficult. True there were members in the Constituent Assembly who suggested that this entry should be in List III. But all that was required was to draw the attention of the members to the entries in List I to indicate that the centre had adequate powers and emphasize that those were the only powers which the centre could legitimately exercise. It became merely an exercise in

the state law "prejudicially affects coordination and determination of standards".

In another case, *Chitralka v. State of Mysore* (A.I.R. 1964 S.C. 182), the Supreme Court had to consider whether or not the power of prescribing (by a state) a higher percentage of marks for extracurricular activities for admission to medical colleges fell under entry 11 of List II. The Court, *inter alia*, observed: "If the law made by the State by virtue of Entry 11 of List II of the Seventh Schedule to the Constitution makes it impossible or difficult the exercise of the legislative power of Parliament under the entry 'coordination and determination of standards in institutions for higher education or research and scientific and technical institutions' reserved to the Union, the State law may be bad. This cannot obviously be decided on speculation and hypothetical reasoning. If the impact of the State Law providing for such standards in Entry 66 of List I is so heavy or devastating as to wipe out or appreciably abridge the Central field, it may be struck down, but that is a question of fact to be ascertained in each case."

More recently on facts similar to those which obtained in the *State of Gujarat v. Shri Krishna*, the Supreme Court held in *D.A.V. College, Bhatinda, etc. v. the State of Punjab* that "the University by adopting Punjabi as the sole or exclusive medium for the colleges affiliated to the university, notwithstanding the concessions granted, acted in excess of the powers conferred on it. While the university can prescribe Punjabi as a medium of instruction it cannot prescribe it as the exclusive medium... ."

Two points emerge from the above observations: (1) on anything coming under entry 66 of List I, even though it may form part of entry 11 of List II, the states have no powers to legislate; and (2) whether in a particular situation the impugned legislation falls under entry 66 List I or entry 11 of List II is "a question of fact to be ascertained in each case".

It is conceivable that in future even matters relating to syllabi, structure of education, scheme of examination, etc will be taken to court. Lack of uniformity in such respects is likely to be an obstacle in the mobility of students. Universities may find it difficult to accept a student migrating in the middle of a course from another university because of the difference in syllabi, examination system or marks awarded, etc, whereas Article 19(d) of the Constitution guarantees freedom of movement. In such a situa-

prevalent are not only allowed to continue but have further been given the status of degree granting institutions.

How far is this legislative overlapping significant? For this purpose an analysis of entry 66 is required. We have already seen how the centre, wishing to take over supervisory control of post-secondary educational institutions, came to have "coordination and determination of standards in institutions for higher education or research and scientific and technical institutions" purely as a result of political forces operating in the country then and the almost total absence of any outside professional opinion in the matter. It would be pertinent to note here that despite several attempts in recent years to bring education into the 'Concurrent List' it has not been possible to do so. And as far as one can visualize there is not going to be any change in the situation in the foreseeable future either.

Against this background, we shall now turn our attention to an analysis of this entry from a legalistic angle and as revealed by certain judgments of the Supreme Court. An examination of the various entries shows that primarily the states have competence to legislate in respect of university education, subject however to entries 63 to 66 in List I. This means that out of the total power reserved for the states a portion has been carved out for the Union.

To illustrate, in *Gujarat University versus Shri Krishna* (A.I.R. 1963 S.C.703) the prescription by the university of Gujarati or Hindi as the exclusive medium of instruction and examination in colleges under the jurisdiction of the university was challenged, and the Supreme Court held by a majority of 4 to 1 that the state had no such power. While entry 11 of List II conferred power on the states in respect of "education, including universities", the exercise of this power was subject to entries 63, 64, 65 and 66 of List I. . . . Even though medium of instruction is not a distinct legislative head, the court held that the use of a particular medium had direct bearing and impact upon the legislative head of "coordination and determination of standards". Therefore this power must be deemed to be excluded from the states' powers. It is quite likely that in this decision the Supreme Court was taking judicial notice of the language controversy. Even though there is no Union legislation in respect of medium of instruction and, therefore, there cannot be said to be any conflict of laws enacted by the states and the Union, the state law is still bad inasmuch as

institutions in order to ensure that proper standards are maintained.

In the light of the foregoing it will be seen that the centre has powers to (a) coordinate which would include "harmonizing or bringing into proper relation in which all the things coordinate, participate in a common pattern of action" and (b) determination of standards which would include (i) academic standards such as laying down minimum requirements for admission to a course and (ii) physical standards to some extent. These powers are wide ranging in character and quite plenary.

IV

Turning our attention now to the legislation enacted by Parliament as a result of the entries in the Union List and the Concurrent List we find that several coordinating agencies have come into being. The foremost of them is the University Grants Commission which was created as a result of a legislation flowing from entry 66 of List I. This is the only statutory agency in the field of education set up as a result of an entry in the Union List.

The U.G.C. Act was passed in 1956 with the specific object of making provision "for the coordination and determination of standards in universities". It shall be the general duty of the Commission to take "in consultation with the universities or other bodies concerned, all such steps as it may think fit for the promotion and coordination of university education and for the determination and maintenance of standards of teaching, examination and research in university" (Section 12 of the U.G.C. Act) By virtue of this Section the Commission can allocate and disburse grants to universities taking into consideration "the development of the university concerned, its financial needs, the standard attained by it and the national purposes which it may serve." But it also has other advisory powers. For instance, it can "recommend to any university the measures necessary for the improvement of university education and advise the university upon the action to be taken for the purpose of implementing such recommendations." It can also "advise the Central Government or any State Government on the allocation of any grants to universities for any general or specified purpose out of the Consolidated Fund of the Union or the Consolidated Fund of the State

tion, each case will be decided on the facts presented to the court. However it is evident that wherever the court is of opinion that, in a particular situation the impugned legislation ought to be construed as coming under entry 66 of List I any state law made in pursuance of entry 11 of List II will be struck down.

In other words, where any alleged disparity comes in the way of coordination on an all-India level, the courts are not likely to concede the university's privilege of prescribing its own standards. As the Supreme Court itself has observed the power of Parliament in respect of coordination and determination of standards is not merely a "power to evaluate" and fix standards of education, but is also a "power to harmonize or secure relationship for concerted action." Parliament can also legislate "for preventing the occurrence of or for removal of disparities in standards. This power is not conditional to be exercised merely upon the existence of a condition of disparity nor is it a power merely to evaluate standards but also to take steps to rectify or to prevent disparity." (*Gujarat University v. Shri Krishna*)

It follows, therefore, that apart from the central government, even the judiciary has a role to play in the development of higher education. For whenever any executive fiat of the centre or its legislation comes up for interpretation before the judiciary, it will have to give such construction as will be conducive to the furtherance of social justice. Dictates of justice no doubt require certainty in the interpretation of laws by the judiciary. At the same time however it must be remembered that what is best in a particular situation will not necessarily be the best for all time to come, especially in a rapidly changing society. It is in this context that the judiciary has a positive role to play as an instrument of ensuring social justice.

With regard to the potentialities of entry 66 it would be best to refer to the views of the Attorney General of India as given in the 'Report of the Committee of Members of Parliament on Higher Education' (popularly known as the Sapru Committee). According to the Attorney General, Parliament, by virtue of entry 66 of List I, has powers to (1) legislate on minimum standards of fitness for admission to universities or to technical and professional institutions including medical, engineering and agricultural institutions; and (2) of directing inspection of colleges and other

institutions in order to ensure that proper standards are maintained.

In the light of the foregoing it will be seen that the centre has powers to (a) coordinate which would include "harmonizing or bringing into proper relation in which all the things coordinate, participate in a common pattern of action" and (b) determination of standards which would include (i) academic standards such as laying down minimum requirements for admission to a course and (ii) physical standards to some extent. These powers are wide ranging in character and quite plenary.

IV

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as the case may be." The U.G.C. has therefore been conceived to be a professional body and vested with both academic and administrative functions for providing leadership to the country in the matter of education.

The other powerful coordinating agency is the Medical Council of India. Set up in 1933, the Indian Medical Council Act of 1933 was repealed in 1956 when a new Act was passed to meet the needs of the changed situation. Before going into some of the salient features of this Act, it would be relevant to note that the entry in the Constitution which empowers the centre to enact such a legislation is entry 26 of List III (Concurrent List) regarding 'Legal, Medical and other professions'.

Among the powers which the Medical Council of India has are: (1) recognition of medical qualifications granted by universities or medical institutions; (2) requisitioning of information as to courses of study and examinations; (3) appointment of visitors and inspectors to report on the conduct of examinations, adequacy of staff, equipment, training, etc; (4) recommending to the central government withdrawal of recognition granted; (5) laying down minimum standards of medical education (other than postgraduate medical qualifications); and (6) prescription of standards of postgraduate medical education for the guidance of universities. As will be seen from the list of powers given above, the sanction behind the powers of the Medical Council of India is its power to recommend withdrawal of recognition granted to a degree.

This professional body, with all its powers, has by and large been able to maintain harmonious relations with universities and medical colleges. At the same time the Council does not hesitate to use its power of derecognition of degrees whenever circumstances warrant. For example, in February 1971 the degrees awarded by Patna Medical College were sought to be derecognised on account of certain malpractices in examinations that came to the notice of the Medical Council. The ultimate power of notifying derecognition is however vested in the central government; so considerable consultations and discussions took place between the Council, the central government and the concerned state government. Eventually the matter was sorted out without the power of derecognition having been actually exercised.

Another coordinating agency set up by an enactment of Parliament (deriving its powers from entry 26 of the Concurrent List) is the Bar Council of India under the Advocates Act 1961. Two of the functions of the Bar Council are "to promote legal education and to lay down standards of such education in consultation with the universities in India imparting such education and the State Bar Councils" and "to recognize universities whose degrees in law shall be a qualification for enrolment as an advocate and for that purpose to visit and inspect universities." [Section 7 (h) and (i)] Further, under Section 24 (1) (c) (iii), a person can be enrolled as an advocate only if the degree in law obtained by him "is recognized for the purposes of this Act by the Bar Council of India." Further, Section 49 (d) empowers it to make rules for prescribing "the standards of legal education to be observed by universities in India and the inspection of universities for that purpose." Besides, under its rule-making powers the Bar Council has laid down that "no person shall be eligible for enrolment under the Advocates Act 1961 unless at the time of joining the course of instruction in law for a degree in law he is a graduate of a university or holds academic qualifications which are considered equivalent to a graduate's degree of a university by the Bar Council of India."

The Bar Council has been able to increase the duration of studies for the bachelor's degree in law from two to three years. Even here the 3-year degree requirement is enforceable only where a law graduate seeks enrolment as an advocate. This apart, by way of coordination or laying down of rigorous standards of legal education, the Bar Council has still to make its impact felt. For example, in the scheme of examinations, division of courses into semester units, physical facilities etc, no uniformity exists and the Bar Council has not as yet devoted its attention to these aspects of legal education.

The Chartered Accountants Act 1949 was enacted "to make provision for the regulation of the profession of Chartered Accountants." This enactment of the centre also flows from entry 26 of the Concurrent List. But the scope of this enactment differs from the other two mentioned above inasmuch as the Council of the Institute of Chartered Accountants holds its own examinations after the students have received suitable training. To that extent this Institute cannot be termed as a coordinating agency.

Since this is a closely knit professional body its influence is fairly extensive and the qualifications awarded by it command respect in the employment market.

A brief account of two other important coordinating agencies in the field of education may not be out of place: the Central Advisory Board of Education and the All-India Council for Technical Education. These agencies however have not been set up on a statutory basis. Nevertheless they wield considerable influence in the shaping of policies on all-India level.

The Calcutta University Commission (1917-1919) felt "that the Government of India could perform an invaluable function by defining the general aims of educational policy, by giving advice and assistance to local governments and universities" and "by supplying organized information as to the development of educational ideas in the various provinces, and also elsewhere than in India." With the Government of India Act of 1919 coming into being, education became a 'transferred' subject. In view of the limited function assigned to the centre under this Act the recommendations of the Calcutta University Commission assumed some urgency and accordingly the Central Advisory Board of Education was set up in 1920. However, owing largely to a financial crisis, it was abolished in 1923. The Hartog Committee Report (1928) observed that "the divorce of the Government of India from education has been unfortunate; and, holding as we do, that education is essentially a national service, we are of opinion that steps should be taken to consider anew the relation of the Central Government with this subject." Consequently, the Central Advisory Board of Education was revived in 1935. Its functions are: (1) to advise on any educational question which may be referred to it by the Government of India or by any local government; (2) to call for information and advice regarding educational developments of special interest and value to India; and (3) to examine this information and circulate it with recommendations to the Government of India and to local governments.

The Central Advisory Board of Education has been meeting almost once every year since 1935. Its proceedings indicate the wide range of topics which are considered by it. In fact even the functions assigned to this Board are couched in such general terms as to give the Board that amount of flexibility which is

necessary in a coordinating agency of this character. While this flexibility may be a strength, in other ways it has been a weakness. For one thing, it has only recommendatory powers. And its composition gives representation to so many agencies and universities that the body becomes too large for any effective or meaningful discussion.

The Central Advisory Board of Education in its plan for post-war development in India observed that technical education in modern conditions cannot be effectively organised on a provincial basis. As a result the All India Council for Technical Education was established in 1945 by a resolution of the Ministry of Education. While the Central Advisory Board visualized the All India Council for Technical Education as an executive body with powers of control over educational policy, it was actually set up as an advisory body. This was because the process of consultations with provincial governments would have been time consuming. On the other hand there was an immediate need, as the Education Ministry's resolution observed, for a "survey by a single competent body of existing facilities, probable post-war requirements and present and prospective proposals for development in this important sphere of education." The Council has committees on important subjects and advisers on all aspects of improvement and coordinated development of technical education. Thanks to its role, facilities for technical education have expanded considerably.

In the context of coordinating agencies in the field of higher education, a passing reference to three other agencies may also be made. Each one of them is a non-official and autonomous agency. Two of them, the Indian Medical Association and the Institution of Engineers are strictly professional bodies. Neither of them has been able to play a role which professional bodies in other countries have played. The third, the Inter-University Board, an association of universities, was expected to play a more decisive role. But the story is almost the same here. Since in terms of its constitution, the universities are represented by their vice-chancellors it can be termed an association of Indian vice-chancellors. Therefore they can have the same kind of professional kinship with one another as members of other professional bodies. Perhaps for the same reasons, which are more sociological than academic or professional, neither of these

agencies has so far played a decisive role in their respective fields of endeavour.

V

A federal structure by its very nature implies the division of powers between the centre and the units. Such a division even in respect of one specific field cannot be dismissed as unworkable. The essential basis for a federation is that the centre and the units have common objectives and goals. How to coordinate with each other is therefore the operative task. Entry 66 in List I provides for it as clearly and as decisively as it could have done. If the requisite degree of coordination has not been achieved so far, it is not for lack of statutory sanctions.

If one were to speak of the parameters of national policy, the centre must promote and organize a national consideration of future policy and, at the same time, encourage states to take and nurture local initiative. For the successful working of such cooperative federalism in which the centre functions as *primus inter pares* a high degree of skill and leadership is called for from the centre. It has also to have professional competence so that it is able to impress the units by the quality of its programmes. This is not being prophetic. In certain areas it is already visible. For example, a non-statutory agency like the Indian Council of Agricultural Research has been able to make its impact felt in a field which exclusively falls in the State List. At the same time a statutory agency like the Bar Council of India operating in a field of 'Concurrent' jurisdiction has not so far been able to effect any great qualitative improvements.

This is a clear enough indication that what matters is really not the constitutional division of powers. What is called for is a plan of action (which can bear professional scrutiny) and not a semantic exercise with regard to the powers of the centre vis-a-vis the states. What precisely is the role of the centre in such a situation? The answer to this is provided in the reports of the Administrative Reforms Commission and the Education Commission.

The Administrative Reforms Commission, set up by the Government of India, appointed a study team on centre-state relationship. Its report has suggested the following functions for the

central ministries dealing with items in the State List.

(1) Providing initiative and leadership to the states, and in particular serving as a clearing house of information intimating details and data about good programmes and methods adopted in one part of the country to the rest of the country.

(2) Undertaking the responsibility for drawing up the national plan for the development sector in question in close collaboration with the states, and developing for this purpose well manned planning and statistical units.

(3) Undertaking research at a national level, confining attention to matters which are beyond the research resources of states.

(4) Undertaking training programmes of a foundational nature, e.g. training of planners and administrators and training of trainers.

(5) Taking the initiative in evaluation of programmes with the object of checking progress, locating bottlenecks, taking remedial measures, making adjustments and so on.

(6) Providing a forum and a meeting ground for state representatives for the exchange of ideas on different subjects and for the evolution of guidelines.

(7) Attending to functions of the nature of coordination which can only be handled at the centre.

(8) Maintaining relations with foreign and international organizations.

Again, the Education Commission (1964-66) observed that "higher education is a Centre-State partnership" and that "education must increasingly become a national concern . . ." Among the responsibilities in the development of education assigned to the centre are: (1) manpower planning in crucial sectors like agriculturc, engineering, medicinc, etc; (2) the improvement of standards; (3) the development of higher education and research with special reference to the postgraduate stage. The Commission further observes, "We are convinced that the radical reconstruction of education which we have recommended in this report will not be possible unless (1) the Government of India provides the needed initiative, leadership and financial support, and (2) educational administration, both at the Central and State levels, is adequately strengthened."

As should be evident, the centre has far-reaching constitutional powers in respect of higher education. If these are not being exercised fully and effectively, its explanation is either administrative or political; it is certainly not constitutional.

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The University Grants Commission

SAMUEL MATHAI

The idea of a committee to be associated with government in determining grants to be given to institutions of higher education originated in Great Britain. As far back as 1889 the Chancellor of the Exchequer set up an *ad hoc* five-man "committee on grants to university colleges in Great Britain." The principle of a quinquennial review of the work and financial position of each college was developed soon afterwards. Another idea that came into being was that of co-ordinating the activities of separate bodies that were dealing with questions relating to finances of various kinds of institutions. But it was towards the end of World War I that the president of the Board of Education held a conference of university representatives and promised increased aid to universities. To distribute the aid for 1919-20 a standing committee of the Treasury was appointed "to enquire into the financial needs of university education in the United Kingdom, and to advise the government as to the application of any grants that may be made by Parliament towards meeting them." This committee was the University Grants Committee. It began with a membership of nine. Today the British U.G.C. has 23 members including the chairman.

The thought that it would be desirable to set up a university grants body in India on the lines of the British U.G.C. occurred to some people in India, and a proposal to this effect was made by

the committee appointed by the Central Advisory Board of Education under the chairmanship of John Sargent (then Educational Commissioner of the Government of India) whose Report on Post-War Development was published in 1943. As recommended by this committee a University Grants Committee was established in 1945 with four members. At first this U.G.C. was concerned only with the three 'central' universities—Aligarh, Banaras, and Delhi. In 1946 and again in 1947 its membership was increased, and it was empowered to deal with all universities in the country. Neither the chairman nor any of the members was wholetime and no funds were placed at its disposal by the government. Its sole function was to make recommendations to the education department, which then transmitted the recommendations to the finance department (later ministry). "The Finance Ministry is, inevitably, required to judge for itself each recommendation made by the Committee."¹

Soon after independence the Government of India appointed a commission "to report on Indian University Education and suggest improvements and extensions that may be desirable to suit present and future requirements of the country."² The University Education Commission (the Radhakrishnan Commission) reporting in 1949 made fresh proposals for strengthening and expanding the U.G.C.:

A Committee or Commission for allocating both recurrent and capital grants to universities from the Centre is so fundamental to our proposals for improving and developing our universities that if it were not in existence we would have had to invent it. We therefore welcome its existence even in its present tentative form. But to serve its full purpose, considerable changes are necessary in its powers and duties and also in its membership.³

The report envisaged that the U.G.C. would be an expert body, which would enable the government to fulfil its responsibility for supporting advanced work in universities, and for making capital grants. It should have "power to allocate grants

¹ *Report of the University Education Commission*, 1949, p. 408.

² *Ibid.*, p. 1.

³ *Ibid.*, p. 408.

within total limits set by the government, instead of merely recommending their allocation to the Finance Ministry which may or may not agree.”⁴ The commission was expected to visit universities as often as possible, though it would have to use panels of experts to do so for specific purposes. And it was to be always available for consultation. The U.G.C. had to be a small body:

We recommend that the Commission should consist of five members, viz., three full-time members appointed by the Government of India, which should also appoint one of the three as chairman, together with the secretary of the Ministry of Finance and the secretary of the Ministry of Education.⁵

The Radhakrishnan Commission, however, allowed that in view of the size of the country and the complexity of the situation the non-official membership might be raised to five, making the total strength seven.

The immediate consequence of the Radhakrishnan Commission's report appears to have been that even the “tentative” U.G.C. faded out, and for some years the country was left without an agency for advising the government and allocating funds for universities. As a result of the reorganization of the administrative system, a separate Ministry of Education was created. (In the British period, Education, Health and Lands formed one composite department.) An educational adviser-*cum*-secretary to the government replaced the former Education Commissioner. The Education Ministry became an elaborate and large body. Despite the Radhakrishnan Commission's proposal for including the secretary and educational adviser as a member of the U.G.C., the ministry seems to have had some hesitation in acting upon the advice.

But the idea of an U.G.C. on the model of the U. K. grants body persisted. The Sixth Quinquennial Conference of the Inter-University Board of India, held in Madras towards the close of 1948, had resolved as follows:

This Conference is of the opinion that provision of adequate teaching, study and research on a university level is essential to

⁴ *Ibid.*, p. 408.

⁵ *Ibid.*, p. 410.

the well-being of a modern State. The Government of India and the Provincial Governments have therefore the responsibility of seeing that such provision is made. The Government of India and the Provincial Governments are requested to aid the universities on an increasingly generous scale with grants (both recurring and non-recurring) for carrying out schemes for expanding their present activities and for promoting research in all subjects.

While appreciating the efforts of the Government of India in helping the universities by their policy of making grants available to them through the University Grants Committee, this Conference is of the opinion that the University Grants Committee should be reconstituted on the general model of the University Grants Committee of the United Kingdom with a full-time Chairman.

To carry out its duties successfully the University Grants Committee should have an adequate Secretariat of its own, so that applications for grants from the universities may be expeditiously dealt with and that it should be empowered to disburse the grants to the universities without the need for further reference to any Department of Government.*

But for a while there was some reluctance in the Government of India to reestablish the U.G.C. The Education Ministry came up with a proposal to set up a Central Council of University Education which would have the advisory and consultative functions of a U.G.C. but would not have any financial responsibilities. This was strongly resisted by universities, and the Inter-University Board reiterated its demand for an effective U.G.C.

After a period of inaction the Ministry of Education "resolved" in 1952 to establish a University Grants Commission with a full-time chairman and a secretary (who would be the disbursing officer) and eight members including two officers representing the Finance and Education ministries. A bill was prepared and placed before Parliament in 1954. The new commission was 'inaugurated' in December 1953 by the Prime Minister and the Education Minister.

The new commission started its life without buildings, staff or

* Report of the VI Quinquennial meeting of the I.U.B. quoted in U.E.C., p. 450.

money at its disposal. The first chairman (the late Shanti Swarup Bhatnagar) continued to be secretary to the government (in the Ministry of Natural Resources and Scientific Research) and also Director-General of the Council of Scientific and Industrial Research. He had neither the time nor much inclination to devote a great deal of attention to the work of the U.G.C. He died suddenly in January 1955, and for nearly a year thereafter the commission had only part-time acting chairmen. Then in 1956 C. D. Deshmukh, who had been Finance Minister in the Government of India and had resigned from that office, was appointed chairman. Only from that time did the U.G.C. have a full-time chairman.

Meanwhile, the commission had developed some programmes and policies, and when the government promoted legislation to make it a statutory body it was already functioning with a certain amount of authority and effectiveness. Since the passing of the U.G.C. Act (3 of 1956) the commission has achieved very real leadership and authority in the Indian university world. The universities of India have learned to rely upon the U.G.C. for advice and guidance, and its judgment in matters connected with higher education is treated with respect.

The functions of the commission as provided in the Act of 1956 are as follows:

It shall be the general duty of the Commission to take, in consultation with the Universities or other bodies concerned, all such steps as it may think fit for the promotion and coordination of University education and for the determination and maintenance of standards of teaching, examination and research in Universities, and for the purpose of performing its functions under this Act the Commission may—

- (a) inquire into the financial needs of Universities;
- (b) allocate and disburse, out of the Fund of the Commission, grants to Universities established or incorporated by or under a Central Act for the maintenance and development of such Universities or for any other general or specified purpose;
- (c) allocate and disburse, out of the Fund of the Commission, such grants to other Universities as it may deem necessary for the development of such Universities or for any other general or specified purpose:

Provided that in making any grant to any such University, the Commission shall give due consideration to the development of the University concerned, its financial needs, the standard attained by it, and the national purposes which it may serve;

(d) recommend to any University the measures necessary for the improvement of university education and advise the University upon the action to be taken for the purpose of implementing such recommendation;

(e) advise the Central Government or any State Government on the allocation of any grants to Universities for any general or specified purpose out of the Consolidated Fund of India or the Consolidated Fund of the State, as the case may be;

(f) advise any authority, if such advice is asked for, on the establishment of a new University or on proposals connected with the expansion of the activities of any University;

(g) advise the Central Government or any State Government or University on any question which may be referred to the Commission by the Central Government or the State Government or the University, as the case may be;

(h) collect information on all such matters relating to University education in India and other countries as it thinks fit and make the same available to any University;

(i) require a University to furnish it with such information as may be needed relating to the financial position of the University or the studies in the various branches of learning undertaken in that University, together with all the rules and regulations relating to the standards of teaching and examination in that University respecting each of such branches of learning; and

(j) perform any such functions as may be prescribed or as may be deemed necessary by the Commission for advancing the cause of higher education in India or as may be incidental or conducive to the discharge of the above functions.

In the Constitution of India (which came into effect in 1950, after the Radhakrishnan Commission had reported) education is mainly a "State" subject: the Centre is responsible for technical education and for coordination of higher education and maintenance of standards. The U.G.C. derives its powers from the central government, and as far as the state universities are concerned its functions are limited to helping in their development. Every

state has not only a financial responsibility for the universities under its jurisdiction, but also a great deal of power to influence and regulate their affairs, and to interfere in them. The U.G.C. has to work in close cooperation with state governments. So far there have been no serious clashes between the U.G.C. and state governments: representatives of the commission have conducted themselves with great tact. But there have been difficulties in planning the development of some of the universities: sometimes when the U.G.C. was willing to meet part of the cost of a proposed 'scheme' of development, the 'matching grants' were not always forthcoming; or when a university and state government concerned were interested in a particular project the U.G.C. was not enthusiastic. The universities have repeatedly requested that the entire cost of all approved "developmental schemes" should be met by the U.G.C., instead of being shared between the commission and the state government. But it has not been found possible to agree to this, because of constitutional difficulty.

The U.G.C. Act provides that the commission is responsible for the maintenance and development of the central universities (now five in number—Aligarh, Banaras, Delhi, Viswabharati, and the newly created Jawaharlal Nehru University) and only for the development of other universities. This has resulted in a certain measure of inequality in the actual situation of the universities: many state governments are unwilling or unable to provide adequate maintenance grants to their universities, whereas the entire assessed maintenance costs of the central universities are met by the U.G.C. Development cannot always be neatly separated from maintenance; a university that has to struggle year after year to maintain its basic staff and 'plant' has difficulty in undertaking development projects.

There is some uncertainty about what is really meant by 'development'. Presumably it is not just normal growth and expansion. It must include increased scope and capacity, widening horizons, higher peaks of achievement. But in actual practice it has been taken to mean mainly new projects or 'schemes' of study and research taken on by a university whenever money is available. Not infrequently the schemes have little vital, organic connection with the regular work of the institution. Development has rarely meant total growth and unfolding of the essential purpose of a university. Discussions between 'visiting committees' of the

U.G.C. and university and state government officials sometimes tend to become exercises in diplomacy rather than a thinking together on the quality of education.

This is not a fault of the U.G.C. It is the result of the prevailing administrative and financial practices which the U.G.C., as a statutory body whose actions are subject to the scrutiny of government and criticism of Parliament, is compelled to adopt. Besides, the fact that the U.G.C.'s fund is a part of the outlay proposed for national development by the Planning Commission every five years does not make things any easier.

When the U.G.C. agrees to make a development grant to a university, the actual sanction has to include some caveats, that the grant is for a 'Plan' project and that the project is sanctioned only for the duration of the 'Plan period', and that the U.G.C.'s share of the estimated cost of the project will be two-thirds or half as the case may be, the balance being found by the state government and/or the university.

At the beginning of each Plan period the U.G.C. prepares its own five-year plan based on five-year plans prepared by the universities. The funds that the U.G.C. may have during a Plan period are determined by the national Planning Commission after discussions with the Ministry of Education and the U.G.C. The commission's fund is a portion of the allocation of money to the ministry. On the basis of this allocation the U.G.C. hopefully informs universities how much each may expect to get for 'plan' purposes during the quinquennium. But in practice the U.G.C. never gets the entire allocated amount. The Education and Finance ministries determine each year how much the U.G.C. may get during that year. The U.G.C. therefore has to caution universities that only a portion of the promised grant may actually be available, and that there is no guarantee that the commission will continue to support any programme beyond the five years or so for which the initial grant is proffered. This uncertainty has made some universities so cautious that they call professors appointed for schemes of this kind 'U.G.C. professors', and the supporting staff is appointed on a 'temporary' basis. This has naturally given rise to some unhappy situations.

Notwithstanding the built-in difficulties, the U.G.C. has patiently endeavoured to carry out the tasks of "promotion and coordination of university education" and "advancing the cause

of higher education in India.” In the early years of the U.G.C. a very large part of its funds was spent for providing universities with buildings and equipment. Several new libraries and laboratories were built, and improved facilities were provided in many places. Universities and colleges were enabled to buy more books for their libraries and to get more and better apparatus for their laboratories. As new universities come up there is a continuing demand for assistance to put up buildings and buy equipment and books. Thus in 1967-68 out of some Rs. 114.4 million paid out to universities and colleges for ‘plan projects’, Rs. 22.7 million was for buildings, 6.9 million for equipment and nearly 4.9 million for books.⁷ There has been some ill-conceived criticism of the U.G.C.’s spending on “bricks and mortar”. But anyone who has had anything to do with the administration of a university will agree that it is not possible to ‘promote’ education without adequate buildings (including residential buildings); even the addition of a hundred books to the library calls for an additional fifty or sixty cubic feet of shelf space.

But the U.G.C.’s most significant contribution to the ‘promotion’ of university education in India has been through the relatively unspectacular steps taken to raise the status and morale of teachers, to stimulate research, and to improve the quality of teaching. Almost from the day of its establishment the U.G.C. has endeavoured to rationalize and revise the salaries in the universities. During the fifteen years or so that the commission has been functioning, it has taken repeated action to raise the pay scales of university and college teachers, and to make the profession more attractive. Inevitably any attempt in a matter of this kind produces complex administrative problems and also some discontent. Professional people are inclined to make comparisons with their counterparts in other countries. Indian salaries are, indeed, still very low compared to those in more prosperous countries. Even in comparison with the higher administrative and other services of India, academic salaries are not satisfactory. The U.G.C.’s concern in this matter, however, has already improved the position greatly in comparison with pre-war and pre-independence situation.

The Radhakrishnan Commission had pointed out that “in

⁷ U.G.C. Report for the year 1967-68.

advanced teaching and research the all-India aspects of university work become more prominent."⁸ The U.G.C. has now developed this idea and identified a few 'Centres of Advanced Study' in some universities. These centres are "selected on the basis of their work, existing facilities and potentialities for further development to function as centres of advanced study in specific fields. These centres are intended to encourage the 'pursuit of excellence' and to provide suitable conditions and facilities for advanced studies and research."⁹ There are at present some thirty such recognised centres; 17 in science and 13 in social sciences and humanities. The U.G.C. has also helped to develop a few 'Centres of Post-Graduate Studies'. These centres are located in or near colleges affiliated to some universities, and receive special support from the commission. This arrangement not only encourages postgraduate work in places away from the headquarters of affiliating universities, but also serves as a first step towards the establishment of new universities.

Through a system of summer institutes, seminars, refresher courses and symposia the commission has sought to enable teachers and talented students to keep abreast of new knowledge and to stimulate discussion and enquiry. The commission also provides small but useful grants to teachers for personal research work and specialized study; grants are given for the publication of learned work, and for academic travel. These and other measures have helped to create in the academic community a feeling that good work and the pursuit of excellence will be appreciated and encouraged.

The commission has served as a catalyst of new ideas. Through a number of conferences and committees set up to study particular problems a new awareness has been created among academic people; at least in major universities and in larger cities there is opportunity for keeping in touch with new trends in knowledge and teaching techniques. The chairman of the commission in his own person and the commission collectively have provided counsel and guidance to universities and to the government. Consequently the commission has come to be regarded as an authority and a repository of information and the best ideas on all matters pertaining to education.

⁸ *Report of the University Education Commission*, p. 409.

⁹ *India Pocket Book of University Education* (U. G. C.), 1969, p. 23.

When the Education Minister decided to appoint an Education Commission in 1964 it was inevitable that the U.G.C. chairman should be asked to be chairman of this study commission. It was in some ways a recognition of the authority that the U.G.C. had acquired in the educational world of India. But this process of becoming an 'authority' has its risks: a conservative tendency develops, a self-justifying attitude comes into being.

The Education Commission (the Kothari Commission) produced a report that is full of valuable information and useful statistics, and contains some sound proposals for the improvement and modernization of education in India. But it is not certain that the Kothari Commission was able to achieve the kind of objectivity that was necessary to take total view of the educational scene and provide a profound criticism of it. There has been a feeling in some quarters that the report has not been able to deal with "the crucial problem" of "the unwillingness of the academics to change, innovate, or provide leadership;"¹⁰ that "we need to go beyond the obvious and analyse in depth the economic, social and political factors that inhibit or promote the capacity of a society to modify its dysfunctional patterns and institutions;"¹¹ that "there is a cart-before-the-horse aspect to the commission's view of how education fits into the larger process of social change."¹²

To some extent the Kothari Commission's inability to make a radical breakthrough and come to grips with the heart of the problem of Indian inertia is related to the fact that it was heavily under the influence of the U.G.C. and the Education Ministry through its chairman, secretary and other persons who helped in gathering material and information for the report.

In Britain the U.G.C. works in close association with the committee of vice-chancellors and principals, and there is opportunity both for cooperation and mutual criticism. There is no body in India to provide the same kind of 'tension' to the U.G.C. The Inter-University Board of India could have been such a body; but lack of funds, the relatively brief term of office of most Indian vice-chancellors, rivalry among states, and anxiety of individual vice-chancellors to avoid being too critical of the U.G.C., have

¹⁰ *Asian Survey*, Vol. IX, No. 10, October 1969, p. 741.

¹¹ *Ibid.*, p. 752.

¹² *Ibid.*, p. 760.

all made the Inter-University Board a rather ineffective "foil" to the U.G.C.

On the other hand, there is always some risk that the U.G.C., as a government appointed body, may not assert its autonomy and may even become somewhat subservient to the government and the Education Ministry. The constitution of the U.G.C. gives the government considerable power over the commission. Section 20 of the U.G.C. Act lays down that "the Commission shall be guided by such directions on questions of policy relating to national purposes as may be given to it by the Central Government." The central government is represented in the commission by two officers—the Finance Secretary and the Education Secretary. Their presence in the commission has certain advantages: they serve as a channel of communication between the government and the commission, and they help to avoid friction between the two. But their presence also sometimes tends to be a restraining and inhibiting factor.

The U.G.C., being an agency of the central government, has to function as an all-India body, and all its activities have to promote national interests. In the first few years of its existence it had no great difficulty in seeking to coordinate the work of universities and to increase the movement of students and teachers among universities and different states. But after the reorganization of states and the emergence of distinct 'linguistic states' a new centrifugal force came into play, and some disintegrating tendencies became apparent. A new anxiety arose in the minds of leaders of the nation, and various measures were proposed to bring about the 'emotional integration' of the country. The Chinese attack on India in 1962 gave a boost to integration, but after a while the divisive tendencies became stronger than before. Politicians in the various states began to urge the importance of regional cultures and languages, and in at least one instance there was talk of secession. The universities were soon embroiled in the controversy. The academic community was also divided in its views on such questions as the medium of instruction (should it be English, Hindi, the regional language?), the place of English in the educational system, and 'outsiders' (i.e., people from other states or regions) being admitted as students or appointed as teachers.

In this kind of atmosphere it has become virtually impossible

for the U.G.C. to talk of universities as 'national' institutions, and to bring about 'coordination' of work and standards in any meaningful sense. Politicians inside and outside the universities exploit the growing parochialism and make it more difficult for any national pooling of resources or talent. Even in these adverse circumstances the U.G.C. has been endeavouring to maintain its primary concern for advancing the cause of education on a national scale.

Everyone hopes that the present divisive tendencies in the country will soon begin to fade away. But persons in the grip of local passions and jealousies say and do foolish things, and some of the effects of the present tendencies may be permanent. If a time comes when Indian universities start using fourteen different languages, making movement of students and teachers from one state to another almost impossible, it may become quite unnecessary to have a national grant disbursing body. It would be simpler and more economical for the Government of India to subsidize state governments and to let them manage their educational affairs as they deem best.

Higher Education and the State Governments

T. R. JAYARAMAN

Higher education in India is in the curious position of being technically a responsibility of the states (entry 11 of State List, Constitution of India) but with a strong input from the centre (entry 66 of List I of the Union List). While the states have ultimate constitutional authority over education, it was recognised that the centre has a strong stake in education, particularly in higher education, in order to fill high-level posts in government. Undiluted state autonomy would have led to marked differences in standards and problems with regard to the availability of trained manpower.

The only way of solving this problem was to provide the centre with some power in education, particularly to coordinate standards. The centre was also given responsibility for higher education for another reason. It was felt that state governments would be more concerned with the lower levels of the educational system since demand for Ph.D's at the state level would not be very great. Channels have been established to provide the centre with power in higher education and to protect national interests in this regard. Most important is the University Grants Commission, which finances aspects of higher education and attempts to provide coordination to the system.

In order to understand the role of the states in higher education, we must examine various aspects of state policies toward univer-

sities. The first of these is motivational. Why does a state expand the facilities in an existing university or establish a new university? The first reason given invariably is the rush of students for places in universities. The second reason usually is the proposal of an existing university to establish new departments in fields not yet covered by it. The point to note here is that the initiative hardly comes from the state government. It usually comes either as a result of public pressure or because a university wants to expand and diversify its activities. While, undoubtedly, there is a general desire to promote higher learning and technology, it cannot be said that the state as an administrative entity has much use for people who are trained in specialized fields like nuclear physics, electronics, chemical engineering, etc. The states therefore do not feel inclined to invest in programmes whose products will be utilized by the centre and not by them directly. Though there are exceptions, on the whole it is applicable in most situations.

It is frequently argued that states neglect higher education owing to scarcity of funds. This is not correct. Indeed there is a fallacy in this argument. On an average most states spend 20% of their budget on education. About nine-tenths of it goes towards supporting sectors other than higher education. This is because states are not convinced that spending more on higher education will bring them corresponding advantages. The number of those who would benefit by any increased allocation for higher education would be too small to be politically important. In any case their training would benefit the states only remotely and in very small numbers. Not unnaturally, therefore, in such a competition primary and secondary schools score over colleges and universities. It would be a safe generalization to make that most state governments depend on central funds for schemes of qualitative improvement in higher education while they themselves do their best to manage problems relating to quantitative expansion. A glance at the latest statistics (see Table) published by the Ministry of Education reveals that the financial burden of higher education falls mainly on the states.

states is not more than Rs 4.5 crores per year per state, but this does not seem to be adequate enough to equip universities as well as they deserve to be equipped. In this situation demand for increased central assistance is understandable.

Annual recurring expenditure 1971-72

	(Rs. crores)	%
1. State Governments	115.10	49.0
2. Central Government	55.47	23.4
3. Local Bodies	1.50	0.6
4. Endowment etc.	6.40	2.7
5. Fees*	57.00	24.3
Total	235.47	100.0

*About 50% of this amount is paid as scholarships by the state and central governments. The states spent Rs. 12 crores and the centre Rs. 6.8 crores on scholarships in 1971-72. These are in addition to the figures shown at 1 and 2.

II

Discussions in state legislatures and the regional press centre largely around topics such as location of colleges and universities, the medium of instruction not so much from the academic as from the political angle, appointment of teachers, tuition fees, student unrest, admission irregularities, and such other matters. The larger questions of modernization of curricula, upgrading of standards or improvement of the examination system are usually considered of little importance. It is significant that states have seldom appointed committees of their own to go into the question of falling standards in university education. In fact the usual tendency is to lower standards to accommodate local interests. This applies most of all to norms for affiliating colleges, appointment of teachers and admission of students. One state government, for instance, is reported to have issued orders that 20% seats in colleges should be reserved for third division students.

It is therefore not surprising that the policy of state governments in general is to do the minimum necessary and that also under pressure of events. Equipping universities and colleges and staffing them adequately are considerations that do not seem to

weigh much with them. Paradoxically however, or maybe in keeping with their general indifference to standards in higher education, state governments have established a large number of universities in the last 26 years. In 1947 there were only nineteen universities. Today the number has risen approximately to 100. This tendency to establish new universities without providing for them adequately has become so intolerable that according to the latest amendment of the U.G.C. Act, state governments have been told that if a university is established without prior concurrence of the U.G.C. that university may not get U.G.C. support for quite some time to come.

Thus two contradictory trends can be discerned. One, the disinclination to spend substantial amounts out of the state budget for equipping existing colleges and universities. Two, the tendency to how to popular pressure and to establish new colleges and universities. The moral is clear. The consumer, viz., the central government, will have to step in. The states do not have funds but they have the authority to establish universities. The centre, relatively speaking, has more funds and also a vested interest in maintaining standards. This may not be an ideal situation but it is a part of the federal structure that the country has chosen for itself.

In the early period, when universities were mainly examining agencies, there was little need for the government to help universities in a major way. In general, lumpsum grants were given to them for their upkeep, and little additional help was provided. Until 1947, postgraduate courses were few in number and generally limited in scope. Since independence, the situation has altered substantially and the growing expenses of higher education have caused the government to take an increasingly larger role in its funding. In addition, the centre has also sponsored directly a number of new educational institutions, such as the IITs, the regional colleges of engineering, and others, often in collaboration with the states. Thus, we have seen a growing but somewhat hesitant central role in higher education.

III

The relationship between universities and state governments can be examined under three heads: financial, legislative and

administrative.

The state government is the main source of finance of the state universities. In most states grants are given on an *ad hoc* basis. Even though the expenditure of the university is more or less known beforehand, a battle has to be waged by the university almost every year to get a grant from the state government. This happens in about two-thirds of the states. In the remaining one-third a block grant is normally sanctioned by the state government for a fixed period, usually five years. This grant is calculated on the average income and expenditure of the previous block period and is intended to cover the deficit of expenditure over income. If there is any increase in expenditure subsequently owing to unforeseen causes, a spurt in cost of living for instance, the university has to make out a case justifying additional grant. Separate grants are also made for new activities. It is usual to expect prior approval of the state government for such developmental activities. With the commencement of the five-year plan era, such grants are given as plan grants. This, however, means approval of plan schemes by three more bodies, viz., the Planning Commission, the Ministry of Education and the University Grants Commission.

The situation is somewhat complex insofar as development schemes are financed out of state plan funds as well as from central and U.G.C. funds. The central government may give grants directly or route them through the U.G.C. The latter has a set of schemes for which assistance is available to universities and colleges. For some schemes full assistance is given while for others a matching share is expected from universities. In the latter case the university usually obtains its share from plan grants made available by the state government.

The procedure of clearing schemes through the state government and the U.G.C. is cumbersome and often time consuming. Universities usually try to speed up the process by negotiating with the U.G.C. directly. Sometimes they meet the required matching share from savings and sometimes they present a *fait accompli* to state governments. Both the departments of education and finance in the state government object to this arrangement and protest to the university or to the U.G.C. or both. The U.G.C. is asked not to sanction any scheme without the state government's approval. In quite a few cases U.G.C. assistance leaves the state

with heavy recurring expenditure in the form of salaries of professors and others whose posts had been created by universities by obtaining 100 per cent grant from the U.G.C. for the duration of a plan period.

The irritations and intricacies of the federal financial system in India are apparent in this quadrangular set-up of Centre-U.G.C.-State-University. Here one autonomous body, the U.G.C. set up by the central government, assists another autonomous body, a university, set up by a state government. The latter is also assisted by the central government for its plan schemes, which, in turn, may mean assistance of a scheme sponsored by a state university. Inevitably, questions of state autonomy, U.G.C. autonomy and university autonomy arise and cause considerable confusion.

From time to time proposals have been made for the establishment of state university grants commissions. Such state level bodies are expected to perform the same function vis-a-vis state universities as are performed by the U.G.C. vis-a-vis central universities. While there are quite a few things that can be said in criticism of such a proposal, on balance perhaps it would be useful to establish such bodies. At present universities have to deal with departments of education and finance. Dealings with finance are unavoidable, whatever be the system or structure. But dealings with the education department can be put on a more scientific basis. In this sense, state level U.G.Cs. can certainly play a useful role. The main danger with regard to the establishment and working of such bodies is the fear that state level bodies may not be manned and staffed by the right kind of persons.

Academic opinion is not much in favour of such agencies. Besides, experience at one or two places where they have been created is not encouraging. But there is a good case for establishing such state level agencies particularly in those states where the number of universities is large.

That academic opinion has not crystallized clearly in favour of such an institutional arrangement is evident from the report of the Gajendragadkar Committee on the Governance of Universities (Part I, page 12) which has expressed itself in favour of determining the quantum of maintenance grants to universities in consultation with the U.G.C. That is to say, since state governments do not have a standing machinery for the purpose, the U.G.C. might be

associated with such an exercise. In the same report, another recommendation (page 33) is to the effect that the Visitor (the Governor of the state) should appoint committees at regular intervals to determine grants. This may not be as satisfactory as is visualized. For one thing, *ad hoc* committees do not always function successfully. For another, there is normally a lack of realism in their operations. Quite often the committee is either controlled by a government nominee who ensures that a 'realistic' recommendation is made or, equally unwelcome, the report once made is shelved or partially implemented because funds of the required magnitude are not made available.

Any kind of institutional arrangement which does not fasten the responsibility clearly and squarely on the state government will not work. Therefore, though it is possible to argue against the establishment of state level university grants commissions, the overall advantage is in favour of establishing such agencies. Additionally, this will oblige states to satisfy themselves rigorously with regard to their investment in higher education. There should be more confidence in the ability and judgement of states in such matters in terms of organisation and responsibility, and the more they are at the centre of things the better it would be in the ultimate analysis.

The legislative relationship between a state government and a university set up by it is somewhat simpler. There are specific provisions in the university acts distributing administrative powers to the university bodies, to the chancellor and to the state government. Powers of subordinate legislation such as framing academic regulations and ordinances are given to university bodies with varying degrees of control. Usually the university is required to take prior approval either of the government or the chancellor. Most often first statutes are framed by the government. Such powers, though apparently legislative and procedural, sometimes have far-reaching financial implications. For instance, in most states, the power to affiliate colleges is vested in the universities. In a few states however the ultimate power is with the government. This is because if too many colleges spring up and increase the state government's grant-in-aid expenditure, it cannot be indifferent to the way in which the university exercises its power. This of course sometimes means that extra academic considerations enter into decision making. But given the

financial relationship between the university and the government a common approach on the part of both is not only in order but almost imperative.

In a few states demands have been made that university accounts be also placed on the table of the legislative assembly and should be scrutinized by the Public Accounts Committee. Theoretically speaking, there is little that one can say against this proposal. But considering the tone and temper of our politics, one dreads to think about the use to which such a procedure would be put.

Administrative control of universities is exercised by state governments in several ways. Some university acts provide for appointment of vice-chancellors by the government directly. But the usual practice is that a panel of names is recommended by a selection committee out of which the chancellor selects one person and appoints him as vice-chancellor. Ultimately it means the same thing as direct government control; the chancellor in most cases is the Governor of the state and functions in his constitutional capacity and therefore acts according to the advice of the state government.

Whether the Governor can act in his personal capacity or is bound to act on the advice of the cabinet has been a matter of discussion for almost two decades. The prevalent view has been that the Governor has no independent personality and he has to function as advised by the state government. There have been instances though where Governors have exercised considerable initiative and independent judgement.

It is largely through indirect means, however, that the state government influences the functioning of universities. This is mostly done by having a number of officers sit on various university bodies. In certain universities, for instance, almost 50% of the members of the syndicate or executive council are officers of the government. The government also has the right to nominate persons on the senate and the syndicate. In quite a few universities the government, operating through the chancellor, also has the right to nominate someone on the selection committee as well. In certain other cases the selection committee appointed has to be formally approved by the chancellor.

Since most of the funds come from the state government, financial control is often exercised in a way that makes university

administrations even more sensitive to state government pressure. And since vice-chancellors are usually appointed for terms of three years indirectly or directly by the government, this is another way of making universities aware of the government's wishes. In a number of states, the government has direct influence over colleges directly funded by it. Thus, principals of government colleges can wield influence through university bodies, and indirectly assist the government.

IV

As a result of the many areas of the government's influence over universities, a contradictory situation has arisen. The academic machinery set up to maintain standards of higher education and assure adequate planning is often thwarted by state governments, which have other priorities for action. Thus, colleges are often sanctioned despite the university's opposition because of strong political pressures. While a dialogue between the government and the university is possible, it is all too often one-sided, with most of the power on the government side.

In recent times, the government has assumed substantial control over what were purely 'academic' matters such as admission policies. If nothing else, admission policy has implications in the field of law and order. An increase in tuition fees or fixing of minimum marks required for admission to a certain course may result in popular agitation. A practical-minded vice-chancellor would normally sound the government before instituting reforms of this type. In fact in quite a few places there is close collaboration between the vice-chancellor and district authorities. This is more a comment on the trend and temperature of politics at the state level than an expression of good management. Government authorities may have many motivations for getting involved in admission policies. A desire to protect the interests of weaker sections of the population by reserving seats in colleges for them is one reason. The government may also try to prevent students from other states gaining easy admission, and thus impose rules of domicile. All states but one have such rules. Government pressure in admission matters is particularly strong in professional fields, where there is much competition for seats.

Legal authorities also involve themselves in the academic

decision making process with increasing regularity as aggrieved individuals—both faculty and students—take matters to court for settlement. Complaints concerning irregular selection of students have caused the courts to raise the numbers admitted to certain engineering and medical colleges. Courts have also ordered affiliation of colleges in opposition to the wishes of university authorities. They have intervened in other areas of academic life as well. While universities have learned to live with this added influence on academic decision making, the situation has not added to the autonomy of higher education.

The picture of higher education as it emerges in the states is on the whole somewhat disenchanting. Popular pressures are felt more keenly at the local and state levels than at any other. State governments usually find it difficult to resist them and this leads to declining standards. Nor are state governments yet convinced of the need to invest large sums of money in higher education. This may be largely due to the rural complexion of state governments. This may be equally due to their having little use for investment in research and other aspects of higher education which are regarded as functions more of the centre than of the states.

If state governments were to understand the place of higher education and its relevance to their needs they would perhaps be prepared to find more funds. But this is not happening. The result therefore is that at best state governments are conducting a holding operation. For the rest they look up to the centre for financial support, leadership and new ideas. All this may not be entirely satisfactory but then let it be remembered that this is the price that the country has to pay for maintaining an effective federal system.

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Part Two

Financial Aspects

The Financing of Higher Education in India

J. L. AZAD

This study was undertaken with the following objectives:

(i) to analyse the behaviour of higher education finance aggregative as well as institutional with a view to gaining insight into the relative financial position of different categories of university institutions;

(ii) to study the patterns, procedures and policies adopted by the central and state governments of financing higher education and to discuss the adequacy or otherwise of the machinery for financial administration; and

(iii) to discuss certain basic policy issues relating to the financing of higher education.

Method of the Study

The data for the study were collected from all available sources: the ministries of Education, Health and Agriculture, the University Grants Commission, the Indian Council of Agricultural Research, the Medical Council of India and the Planning Commission. The information about the patterns and procedures of state governments' grants to institutions of higher education was obtained from state governments through a questionnaire.

*The views expressed in this paper are those of the author and do not represent the policy of the Planning Commission.

Based on information made available by the central and state governments and personal discussions with a number of persons concerned with the administration and financing of higher education, the following two questionnaires were drawn up:

(i) patterns and procedures of state grants-in-aid to institutions of higher education, and

(ii) certain important policy issues like the role of the central and state governments in the financing of higher education; fee policy; financial administration and the question of optimising private contribution etc.

The first questionnaire was mailed to 356 principals of private affiliated colleges concerned with arts, science, commerce, teacher education and engineering and technology. The colleges represented about 10% of the total collegiate institutions. The second questionnaire was sent to vice-chancellors of all Indian universities and 54 experts, mainly professors of economics and education in Indian universities, institutions and certain educational authorities. The total number of respondents, whose replies were accepted for analysis, was 180.

Complexion of Indian Higher Education

A brief overview of the institutional pattern and admission policies, as evolved in Indian higher education during the last two decades of planned socio-economic development, is attempted below:

(1) The institutional pattern that has emerged in the post-Independence period is heterogeneous and diffused in complexion, size and quality. In spite of the efforts at rationalizing the system, it has not responded fully to corrective measures with the result that it does not appear to have developed a 'personality' of its own. Rationalization of the system is an essential prerequisite for bringing about efficiency in the system of educational finance.

(2) The expansion of higher education in the post-Independence period has been characterized by an almost unplanned growth of institutions and enrolment, particularly in the arts and commerce faculties. Even in professional subjects, there is not much evidence of planned development as would be apparent from the hiatus between the supply of and demand for engineering graduates and diploma holders resulting in large-scale unemployment

among technically trained personnel in recent years.

- (3) The absence of any real attempt at ensuring a systematic development of higher education is evident from the large variations in the average population served by universities in different states.¹ The average student enrolment served by each university also differs materially in different states. The impression one gets is that in a number of cases extra-academic considerations are the deciding factors in setting up universities and other collegiate institutions. Even at the collegiate stage, the giant institutions co-existing with small uneconomic units bear testimony to the haphazard institutional growth.

(4) There has been a sizable increase in student enrolment which has even outpaced the average annual increase at the school stage. This is in spite of the fact that the government is constitutionally required to promote free and compulsory education at the elementary stage.² Further, the unplanned expansion has almost barred any improvement in quality of education as is evidenced by a large rate of wastage and other indicators. No efforts at controlling admissions to universities seem to have been made nor does there appear to be a well considered policy of admissions.

At present, university expansion appears largely to be the result of social and political pressures and the prestige attached to a university degree rather than the ability or aptitude of students particularly in arts and commerce courses. There is need for evolving a rational policy of university admissions. This has particular relevance to professional education where cost of instruction is higher than in general education, and frustration on account of lack of employment is much more serious.

MAGNITUDE OF INVESTMENT IN EDUCATION

All India Aggregates

A study of the growth of investment in education as well as higher education has revealed continuous increase in expenditure on education and higher education as a percentage of national income over the years. The table overleaf sums up the position:

¹The average population served by each university ranged between as low as about 2 million in Jammu and Kashmir and 11 million in Andhra Pradesh.

²i.e. for children up to 14 years of age.

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The analysis has revealed the following: (i) Average annual growth rates of total expenditure on education as well as per capita expenditure on education, during the period 1950-51 and 1970-71 were higher than the growth rates of the Net National Product and per capita national income. The following table may be seen in this connection:

TABLE 2

	<i>Average Annual Growth Rates (1951-71)</i>
(a) Net National Product at Factor Costs	6.2%
(b) Total Expenditure on Education	11.4%
(c) National Income Per Capita	4.0%
(d) Expenditure on Education Per Capita	9.0%

(ii) Educational expenditure as a percentage of the national income more than doubled itself during the period 1950-51 to 1970-71. The expenditure on higher education as a percentage of national income, during a shorter period (1951-66), however, increased four times. The per capita expenditure on education increased about six times. During the same period, the national income per capita increased a little more than twice: from Rs. 264 in 1950-51 to Rs. 577 in 1970-71. The increase in educational expenditure has, however, been at current prices and does not indicate the *real* increase. It may, however, be mentioned that during the period 1951-71, there was a twofold increase in the wholesale price index, indicating thereby that the per capita expenditure on education, in real terms, increased from Rs. 3.2 in 1950-51 to about Rs. 9 only in 1970-71 instead of Rs. 19.2 as indicated in the table. The same would apply to expenditure on higher education.

(iii) Educational expenditure as a percentage of national income was around 3 in 1970-71. This compares unfavourably with the corresponding position in some of the advanced countries like the USA, UK, USSR etc., where 6 to 7 per cent of the national income is spent on educational development. International comparisons have, however, a very limited validity because of the varying stages in educational and economic development, the demographic and other factors operating in different countries etc. Even the exchange value of different currencies does not

TABLE 1
GROWTH OF NATIONAL INCOME, POPULATION AND EXPENDITURE ON EDUCATION — 1950-51 TO 1970-71
(at current prices)

Item	1950-51	1955-56	1960-61	1965-66	1970-71
(a) Net National Product at Factor Cost (Rs. in millions)	95,300	99,800	1,32,940	2,06,210	3,15,690
(b) Total Expenditure on Education (Rs. in millions)	1143.8	1896.6	3448.8	6220.2	9969.7*
(c) Total Expenditure on Higher Education (Rs. in millions)	180.5	365.9	769.4	1573.7	N.A.
(d) National Income per capita (Rs.)	264	252	307	426	577
(e) Expenditure on Education per capita (Rs.)	3.2	4.8	7.9	12.8	18.2
(f) Percentage of Expenditure on: (i) Education to National Income	1.2	1.9	2.6	3.0	3.1
(ii) Higher Education to National Income	0.19	0.37	0.58	0.76	N.A.
(g) Wholesale Price Indices	100.0	82.7	111.7	147.0	202.7

*Estimated

N.A.—Not Available

Sources: Figures about Net National Product and Population have been taken from Estimates of National Product, 1960-61—1969-70 published by the Central Statistical Organisation; 1971 p. 1. Figures for 1970-71 have been taken from the Fourth Plan Mid-term Appraisal, Vol. I. Planning Commission, 1971, pp. 1-2; wholesale price indices have been adapted from the Reserve Bank of India Bulletin: 'Currency and Finance' and CSO Abstracts. Figures about educational expenditure have been taken from the Ministry of Education's publications: *Education in India* and *Education in Universities in India* for the different years.

NOTE: At the current rate of exchange, one U.S. dollar is equivalent to Rs. 7.20.

(iv) Estimates of per capita net domestic product for different states are based on different concepts, methodologies and source materials and hence are not strictly comparable. Beyond these estimates, however, no other data are available and hence they have been utilized for the purpose.

a) A Comparative Study of the State's 'Effort' and 'Capacity' to Spend on Education

(a) Comparison of the 'effort' of different states as represented by per capita expenditure on education as a proportion of their 'capacity' measures in terms of the per capita net domestic product was made for the years 1956-57, 1960-61 and 1965-66. In order to study the degree of association between different states, rank correlations were computed between different pairs of years. Co-efficients of variation were also calculated to study the degree of variation among different states. The significance of the difference in the ranking of states was tested by a non-parametric (Mann-Whitney) test.

The table on pages 58 and 59 sums up the results of the analysis. It would be noted that:

(a) in terms of per capita expenditure on education as a proportion of per capita net domestic product, the relative positions of states have undergone material changes over the years. Rank correlations among states for the years 1956-57 and 1960-61, 1960-61 and 1965-66 and 1956-57 and 1965-66 are 0.87, 0.52 and 0.52 and 0.19, which indicate that the longer the period the lesser is the association between states.

(b) a study of fluctuations in the co-efficient of variations as indicated in the table reveals:

(i) the differences among states in regard to 'effort' have narrowed down, and

(ii) educational expenditure is a social overhead and has an element of inevitability—it must be incurred regardless of the states' financial capacity.

It is of interest to see if there were significant differences in the rankings of various states over the years. To study this, a non-parametric test (Mann-Whitney) was set up to test the hypothesis that there were no significant differences between the years

represent the internal purchasing power in different countries. Further, developing countries have to cover the ground in a much shorter time span than advanced countries whose expansion was gradual. It only shows that India has to go a long way to catch up with advanced countries in terms of expenditure on education.

INTER-STATE COMPARISONS

There are substantial inter-state differences in relation to educational expenditure because of differences in levels of economic development, position of educational expansion at different stages and requirements of technically trained personnel. A comparative study of states on the basis of scientifically valid parameters, applicable to all states, therefore, becomes difficult. A rough idea of the comparative position of states could, however, be attempted on the basis of the following variables:

- (A) a comparative study of the 'effort' and 'capacity' of states to spend on education,
- (B) comparison of states in terms of per capita (direct) expenditure—total and higher education, and
- (C) inter-institutional priorities—all-India and statewise.

The above analysis is subject to the following limitations:

- (i) In view of the reorganization of states in 1956, comparable statewise data about reorganized states* is available only for the years 1956-57 onwards.
- (ii) Expenditure figures for higher education for different states are available only in respect of 'direct expenditure' i.e. expenditure on salaries of teachers, administrative staff, and other consumable items.
- (iii) The only authentic information about population in different states relates to 1960-61 and 1970-71. For 1956-57 and 1965-66, population figures as estimated in the Planning Commission were adopted.

*Maharashtra and Gujarat and Punjab and Haryana, which were carved out of the erstwhile Bombay State and Punjab State respectively, have been combined,

Punjab/Haryana	352	6.6	1.9	6	388	9.3	2.4	8	610	14.4	2.4	12
Rajasthan	299	3.4	1.1	14	323	6.3	2.0	13	381	10.0	2.6	10
Tamil Nadu	289	5.2	1.8	7	335	9.4	2.8	4	437	16.4	3.8	3
Uttar Pradesh	232	4.1	1.8	8	246	5.4	2.2	11	364	8.8	2.4	11
West Bengal	271	8.2	3.0	2	318	9.7	3.1	2	403	14.9	3.7	4
Mean	257.79	4.94			296.14	7.74			394.93	12.31		
Standard deviation	45.86	1.68			50.18	2.30			82.01	3.50		
Co-efficient of variation (%)												
Correlation between per capita net domestic product & per capita expenditure on education	0.46				0.68**				0.43			

Sources:

- (1) Estimates of Net Domestic Product prepared by the state bureaux of statistics and economics. For Gujarat and Maharashtra and Punjab and Haryana, separate figures in respect of educational expenditure in 1956-57 are not available and hence, for a comparative study, the average of the per capita net domestic product has been computed.
- (2) Population data were obtained from the Registrar General, Census, for 1960-61. For other years, the figures estimated in the Planning Commission have been adopted.
- (3) Expenditure figures obtained from *Education in India*, Vol. I.

* 1963-64

** Significant at 5% level.

NDP = Net Domestic Product.

TABLE 3

PER CAPITA EXPENDITURE ON EDUCATION AS PERCENTAGE OF THE PER CAPITA NET DOMESTIC
PRODUCT IN DIFFERENT STATES

(At current prices)

States	1956-57					1960-61					1965-66				
	Per Capita NDP	Per Capita expd. on Edn.	Col. 3 as %age of Col. 2	Rank	Per Capita NDP	Per Capita expd. on Edn.	Col. 7 as %age of Col. 6	Rank	Per Capita NDP	Per Capita expd. on Edn.	Col. 11 as %age of Col. 10	Rank	Per Capita NDP	Per Capita expd. on Edn.	Col. 12 as %age of Col. 11
1	2	3	4	5	6	7	8	9	10	11	12	13			
Andhra Pradesh	255	4.3	1.7	9	284	7.1	2.5	6	393	10.6	2.7	9			
Assam	294	4.8	1.6	10	311	7.6	2.4	8	418	12.3	2.9	7			
Bihar	163	3.3	2.0	5	203	4.9	2.4	8	323	6.2	1.9	14			
Gujarat	299	7.0	2.3	3	385	11.4	3.0	3	492	14.6	2.9	8			
Maharashtra															
Jammu & Kashmir	226	2.7	1.2	13	253	5.7	2.3	10	255	14.2	5.6	1			
Kerala	228	7.4	3.2	1	276	11.5	4.2	1	404	19.3	4.8	2			
Madhya Pradesh	261	4.1	1.6	11	285	6.2	2.2	12	352	11.3	3.2	6			
Mysore	232	5.0	2.2	4	290	9.5	2.6	5	393	12.7	3.2	5			
Orissa	208	3.0	1.4	12	249	4.5	1.7	14	304*	7.0*	2.3	13			

TABLE 5
PER CAPITA DIRECT EXPENDITURE ON EDUCATION AND HIGHER EDUCATION IN DIFFERENT STATES

States	Education						Higher Education					
	1956-57		1960-61		1965-66		1956-57		1960-61		1965-66	
	Per capita Expd.	Rank	Per capita Expd.	Rank	Per capita Expd.	Rank	Per capita Expd.	Rank	Per capita Expd.	Rank	Per capita Expd.	Rank
Andhra Pradesh	3.6	6	5.5	8	9.1	9	0.6	9	1.1	6	2.5	7
Assam	3.4	7	5.7	7	10.1	8	0.5	11	0.9	12	1.7	12
Bihar	2.1	11	3.2	13	4.7	14	0.4	12	0.6	13	1.5	13
Gujarat/Maharashtra	1.8	14	8.5	2	13.3	2	1.0	3	1.7	3	3.2	4
Jammu & Kashmir	2.0	12	4.9	11	10.9	6	0.4	13	1.0	10	3.4	3
Kerala	5.4	3	9.3	1	15.0	1	0.7	6	1.2	4	2.9	5
Madhya Pradesh	3.2	9	5.0	9	8.9	11	0.5	10	1.1	9	2.4	9
Mysore	3.9	5	5.7	6	10.1	7	0.6	8	1.1	8	2.6	6
Orissa	1.9	13	2.7	14	6.1	13	0.3	15	0.4	14	1.4	14
Punjab/Haryana	5.7	2	6.9	4	11.4	5	1.3	2	1.7	2	4.1	1
Rajasthan	3.0	10	4.9	10	9.0	10	0.7	6	0.9	11	2.4	10
Tamil Nadu	4.4	4	6.8	5	13.0	3	0.7	6	1.2	5	2.6	8
Uttar Pradesh	3.3	8	4.2	12	6.8	12	0.9	4	1.1	7	2.1	11
West Bengal	5.9	1	7.0	3	11.4	4	1.4	1	1.9	1	3.5	2
Mean	3.54		5.74		9.99		0.70		1.14		2.59	
Standard deviation	1.34		1.78		2.75		0.32		0.40		0.75	
Coefficient of variation (%)	26.4		36.0		27.5		45.7		35.1		28.9	

1956-57 and 1960-61 and 1960-61 and 1965-66 with respect to the ranks of various states. The test statistic was significant for both the pairs of years at 5 per cent level. Hence there were significant differences in the rankings of states over the years. The following table sums up the position:

TABLE 4

Rank correlations and values of Mann-Whitney test statistics

1956-57	1956-57	1960-61	1965-66
	—	0.87 (5.09*)	0.19
1960-61		—	0.52 (4.84*)
1965-66			—

Figures in parantheses indicate values of Mann-Whitney test statistic.

*Significant at 5% level.

The table opposite sums up the relative position of the states in terms of the per capita direct expenditure on education and higher education for the years under study:

One important point which can be noticed from the above tables is that whereas the coefficient of variation of per capita expenditure on education (direct and indirect) tended to fall from 34.01 in 1956-57 to 28.4 in 1965-66, the coefficient of variation of per capita direct expenditure has remained almost stable during the period, implying that differences among states in regard to per capita direct expenditure on education have remained almost static during these years. Contrariwise, the differences among states in regard to per capita expenditure on higher education have tended to narrow down as would be seen from the reduction in the coefficient of variation from 45.7% in 1956-57 to 28.9% in 1965-66.

It appears that states which spend more on overall education also spend more on higher education. This is substantiated by the rank correlations* among states between per capita direct expenditure on higher education. This association has, however, shown a tendency to become weaker over the years because states appear

expenditure (teachers' salaries, scholarships etc) and investment expenditure (buildings, equipment, library books, laboratories etc). It was found that the percentage of 'consumption' expenditure to the total university expenditure increased from about 41 in 1947-48 to 52 in 1965-66. This signifies that as pressure of enrolment increased, institutions of higher education were content with providing the teaching and administrative staff and a modicum of scholarship rather than basic facilities like institutional buildings, laboratories and library books etc.

SOURCES OF HIGHER EDUCATION FINANCE—AN OVERALL ANALYSIS

Recurring Income

The following table indicates the proportionate contribution from various sources of university finances in the post-Independence period:

TABLE 6
SOURCEWISE CONTRIBUTION TO THE RECURRING INCOME OF
UNIVERSITIES AND COLLEGES

(Rs. in millions)							
Year	Central Government	State Government	Local Bodies	Fees	Endowments	Other Sources	Total
1947-48							
Total	6.68	19.44	Nil	14.85	3.48	9.52	53.97
%age	12.4	36.0	—	27.5	6.4	17.7	100.0
1950-51							
Total	9.40	54.14	0.90	70.38	6.25	15.55	156.62
%age	6.0	34.6	0.6	44.9	4.0	9.9	100.0
1955-56							
Total	31.13	105.25	0.77	132.53	5.64	26.09	301.41
%age	10.3	34.9	0.3	43.9	1.9	8.7	100.0
1960-61							
Total	74.52	214.23	3.08	224.22	9.12	38.85	564.02
%age	13.2	38.0	0.5	40.0	1.5	6.8	100.0
1965-66							
Total	263.53	484.88	9.97	425.32	10.80	81.53	1276.32
%age	20.7	34.8	0.8	33.3	0.9	6.5	100.0

to be eager to spend proportionately larger amounts on higher education than on school education.†

C INTER-INSTITUTIONAL PRIORITIES

Proportionate Institutional Expenditure

An analysis of the data has revealed that there have been significant shifts in the proportionate expenditure spent on different constituents indicating shifts in priorities accorded to them. The components that suffered a diminution were: direction and inspection, research institutes, colleges for general education, and institutions of school level. On the other hand, universities, boards of secondary education, colleges for professional and special education have gained over the years under study.

The average annual growth rates (compounded) of expenditure on different constituents were computed and it was found that the largest reduction occurred in the case of research institutions (minus 2.7% per year); followed by direction and inspection (minus 1.30%); colleges for general education (minus .76%) and schools for general education (minus .65%). On the other hand, the rate of growth of per capita expenditure was plus 4.9% in the case of boards of secondary education, plus 3.7% in the case of colleges for professional education and plus 2.27% in the case of university teaching departments.

An analysis of statewise expenditure on different constituents was made and it was found that the mean of the percentage of direct expenditure on higher education to the total expenditure on education has been rising over the years signifying that states have been spending larger outlays on higher education than on other educational programmes. It was also revealed that disparities among states as reflected in their proportionate expenditure on higher education have narrowed down over the years. This is revealed by the decline in the coefficient of variation in respect of different states from 26.90% in 1956-57 to 17.74% in 1965-66.

Analysis of University Expenditure by Components

The university expenditure was broken up into consumption

†This is also substantiated by studying the behaviour of developmental expenditure over the plan periods.

was from about Rs.35 lakhs in 1947-48 to a little over Rs. 1 crore in 1965-66 i.e. about three times.

In the study of the patterns, procedures and policies of financing higher education in India conducted by the author, it was revealed that institutions showed very little enthusiasm for raising private contributions for higher education. Further, increasing taxation and spiralling inflation, particularly in the post-Independence period, seem to have seriously limited the capacity of people in the lower and middle income groups to contribute to education. The tendency to leave as much to the government as possible and the general apathy of the public to social welfare programmes are possible causes of the decreasing private contributions.

It has also been noticed that unlike in the pre-Independence period, a call to 'national duty' fails to get enthusiastic response. It is feared that in case no special measures are taken to stimulate private contributions, it could be written off, in the not-too-distant future, as a dependable source of university finances.

Contribution from 'Other Sources' has also shown a constantly downward trend. In view of the unreliable character of this source, it cannot be expected to make any regular and sizable contribution to university finances.

Association Between Selected Sources of University Income

In order to measure the degree of association among different sources of income of universities and colleges, coefficients of correlation were calculated between the proportionate contribution from important sources of university finances. The following interesting results may be noted:

(i) All through the years, there was insignificant negative correlation between the proportionate contribution from the central and state governments to the recurring income of universities and their colleges. There is, therefore, no definite pattern of association between contribution from the central and state governments. In the case of non-recurring income, however, there has been significant correlation between the central and the states' contribution during 1955-56 and 1960-61. But in 1965-66, the degree of association was insignificant. This could possibly have been due to the heavy cuts imposed on developmental activities because of the conflicts with China in 1962 and Pakistan

It would appear that the central contribution to university expenditure, which stood at 12.4% in 1947-48, was reduced to 6.0% in 1950-51. Thereafter, however, partly because of the emergence of planning as an instrument of economic and social development and primarily because of the establishment of the U.G.C. in 1953, the central government assumed an increasing role in higher education and its financial contribution to higher education steadily increased. By 1965-66, it was responsible for one-fifth of the recurring income of universities and colleges.

The contribution from the state governments also showed a downward tendency during the period 1948-49, whereafter it rallied a little and stood at 38.0% in 1960-61, but declined again to 34.8% in 1965-66.

Taken together, the central and state governments accounted for about 55.5% of the total recurring income of universities and their colleges in 1965-66. This compared favourably with a little over 48% contribution from government sources in 1947-48.

Local bodies have never made any sizable contribution to university finances. This is mainly because their statutory responsibilities do not extend beyond elementary education. Their contribution has been less than 1% over the years under study.

Fees, after the government, are the second largest source of university finance. After a steep rise in the proportionate contribution from fees between 1947-48 and 1950-51, there has been a continuously downward trend in the proportionate contribution from this source. This can be partly attributed to the increasing government subventions, which reduced the proportionate contribution from this as well as other sources, and partly because of the policy of certain state governments like Jammu and Kashmir to provide tuition-free education even at the higher education stage.

There has been a continuously downward trend in the proportionate contribution from endowments to university income. The contribution from endowments decreased from 6.4% of the total recurring income in 1947-48 to 0.9% in 1965-66. Even in absolute terms, the increase in the contribution from endowments has been marginal—at least not commensurate with the increase in recurring income of universities and colleges. While the total recurring income of universities increased from about Rs. 5.4 crores in 1947-48 to about Rs. 128 crores in 1965-66, signifying about 25 times increase over the years, the increase in endowments

relative share of these institutions was neither commensurate with their proportionate enrolment nor with their numbers.

(iii) The largest single beneficiaries of central subsistence have been professional colleges, which accounted for 40.3% of the total central assistance made available in 1950-51. This increased further to 41.4% in 1963-64. The major cause of the increasing central assistance to professional institutions was the spurt given to the expansion of technical institutions particularly following the border conflict with China in the autumn of 1962.

(b) *State Governments*

(i) The bulk of state governments' assistance was confined, in order to relative magnitudes in 1963-64, to colleges for professional education (41.9%), colleges for general education (33.9%) and universities (21.5%). There was some diminution in the states' assistance to universities and colleges of general education over the years. As has been indicated earlier, there was corresponding increase in central contribution to these institutions.

(ii) Colleges for special education obtained only marginal assistance (1.8%) of the states' total assistance.

The analysis of government contribution indicated the following trends in government assistance to institutions of higher education:

(a) assistance from the government—both central and states—has been erratic and inconsistent over the years. It seems to be based on the exigencies of the financial situation prevailing in a particular year rather than the result of a well thought-out policy of institutional development;

(b) the government has been paying greater attention to financing universities and colleges of professional education; and

(c) colleges of general education have been receiving diminishing financial support over the years. If, in the process, the quality of education in these colleges is diluted, the reasons would not be far to seek.

(c) *Fees*

It was noted that, in earlier years, there was a wide scatter of contribution from fees to university finances. In later years, however, the fee contribution tended to concentrate on interme-

in 1965.

(ii) There was significant correlation between the central contribution and fees during 1955-56 and 1960-61; thereafter the degree of association decreased. There was little or negative correlation between the states' contribution and fees after 1955-56. This means that while contribution from the central and state governments increased, the fee contribution was reduced. Obviously this is the result of a policy of reducing fees adopted by states.

(iii) All through the years, there has been negative correlation between the states, contribution and endowments. This is because of the very steep decline in the contribution from the endowments to university finances. The relative contribution from the states, however, did not suffer as much diminution over the years under study.

SOURCES OF UNIVERSITY FINANCES—INSTITUTIONAL ANALYSIS

This analysis was done by computing:

(a) the proportionate sourcewise contribution to the recurring and non-recurring income of universities and their colleges, and

(b) the relative shares of the different types of institutions out of what may be called the "divisible pool" of resources to their direct expenditure. This analysis, for obvious reasons, was confined to the assistance from the government—central as well as states.

The following trends were noted:

(a) *Central Government*

(i) In the early years after Independence, the share of the colleges for general education and special education out of the total central contribution to higher education was minimal. The relative share increased in the years following 1960-61, but still it was much less than the share of other institutions.

(ii) The bulk of central assistance (86.1%) in 1963-64 was confined to universities, research institutions and professional colleges like agriculture, medicine, engineering and technology and other similar institutions. In comparative terms, however, there was some reduction in the central assistance to these institutions over the years. This indicates somewhat increasing central government's assistance to colleges for general education, although the

in 1965-66. The largest beneficiaries of government assistance (83.8% of the direct expenditure) were teacher training colleges, followed by engineering and technological institutions (76.5%) and medical and veterinary colleges (75.1%) in 1965-66.

(v) The only institutions where private organisations were more munificent were colleges of special education and institutions concerned with music, dance etc. Private bodies were responsible for about 28% of the direct expenditure of these institutions (about 47% in girls' institutions) against about 17% in universities; 12% in college of general education; 7.7% in respect of engineering and technological colleges; 6.5% in teachers' colleges; and 4.6% for medicine and veterinary institutions.

SUMMING UP

While summarising the source wise contribution to institutions of higher education analyzed in this study, it may be interesting to see how far the financial support to these institutions, particularly from the central and state governments, has been conducive to the development of higher education in the post-Independence period with particular reference to the broad aims and objectives of higher education.

Obviously, a study of this type does not easily lend itself to a statistically valid quantification, partly because the foregoing analysis brings out shifts in the proportions of the various sources of finance over the years and does not measure the adequacy or otherwise of the magnitude of finances available to different types of institutions. Further, it is difficult to lay down norms and standards for evaluating the development of higher education as this would involve value judgments about the definition of 'development', the complexion of higher education etc. Moreover, the important objectives of higher education cannot be easily quantified in order to see how far the financial support from government and other sources has helped (or hindered) in their realization.

Notwithstanding the limitations inherent in the process, the analysis of the proportionate contribution from different sources has brought to light certain interesting shifts in the relative financial supports made by these sources, which have important repercussions for the objectives of higher education. The following

diary ranges. In 1955-56, the largest percentage of universities and colleges (84.38) received between 20% and 60% of their income from fees. In 1965-66, the percentage of universities in this contribution range was 55.00. It is also significant that even in 1965-66 about 4% of universities and colleges depended on fees to the extent of 60% and above of their recurring income.

(d) Endowments

There has been continuous reduction in the relative contribution from endowments, so much so that contribution from this source got reduced from 6.4% of the total recurring income of universities and their colleges in 1947-48 to 0.9% in 1965-66.

PATTERN OF INSTITUTIONAL FINANCE

An attempt was made to study the behaviour of the sources of finance pertaining to different types of institutions like universities, research institutions, colleges of general education and professional education etc. The analysis revealed the following:

(i) In the case of universities, there has been substantial increase in the proportionate contribution from government particularly after 1955-56 when the U.G.C. started making contribution to the finances of the universities. •

(ii) research institutions depend primarily on government support; over the years government contribution has indicated a tendency to decline. Curiously enough, contribution from local bodies and fees has proportionately increased.

(iii) In the case of combined arts, science and commerce colleges, government contribution has increased from 28% of the total direct expenditure in 1947-48 to about 42% in 1965-66. There has been some diminution in the contribution from fees, but still they were responsible for about 50% of the direct expenditure of these institutions representing the highest contribution from this source among all institutions of higher learning.

(iv) colleges of professional education are much more comfortably placed so far as government contribution is concerned. Further, over the years, there has been a progressive increase in contribution from the central and state governments—from about 71% in 1947-48, government contribution increased to over 76%

revealed that despite the state grant-in-aid rules, the assistance is neither adequate nor it is given immediately after the establishment of an institution. This calls for a radical change in the policy relating to the establishment and financing of these institutions.

(iv) An important aim of higher education is to extend the frontiers of knowledge and to encourage the pursuit of excellence. The objective seems to have been kept in view as larger government assistance has been given to universities. The position, however, becomes less reassuring as the centre's financial contributions to research institutions has gone down considerably although it still continues to be the mainstay of these institutions. Assistance from state governments has never been of any significance.

(v) There has been a diminution in the overall contribution from fees to the university finances. As already stated, however, in the case of general education colleges, fees still constitute the largest single source of their direct expenditure. An analysis of the state grant-in-aid rules has revealed that those pertaining to fees are, by and large, anachronistic; they neither allow fees to be utilized for enhancing institutional resources nor can they be used as a regulatory mechanism for college admissions. The present day fees, which are uniformly levied, provide an undeserved subsidy to the middle classes in urban areas which are, by and large, the recipients of higher education.

(vi) There has been a consistent decline in contributions from private and other sources to the finances of institutions of higher education. Only colleges of general education and intermediate colleges can be said to be the beneficiaries from these sources. For other institutions their contribution is almost negligible. Under the present policy of unplanned growth of higher education, government assistance cannot go a long way and hence steps need to be taken to stimulate private benefactions.

FINANCIAL ADMINISTRATION

There is a multiplicity of organizations concerned with the provision of financial assistance to institutions of higher education in India. But there is not much coordination in the financial administration at the central and state levels. The various agencies concerned with financing higher education do not have any built-in

general trends may be noted:

(i) The analysis of sourcewise contribution reveals the absence of clear-cut demarcation between the central and state governments in the financing of institutions of higher education. Both the central and state governments are contributing, in varying degrees, to all types of institutions. It has also been found that financial assistance from the government has been, by and large, inconsistent and erratic.

An inference that could be drawn from the analysis is that the magnitudes of financial support, particularly from the central and state governments, are not always based on rationally devised criteria. On the other hand, they seem to be the result of a policy of 'ad hocism' based mainly on the exigencies of the financial situation. There is a need for rationalizing procedures and patterns of financial assistance particularly from state governments so that adequate assistance could be ensured to institutions of higher education keeping in view the broad national objectives. It would also be useful if the central and state governments could demarcate, as clearly as possible, their respective areas of operation and provide adequate financial assistance mainly in those areas/institutions. This, besides avoiding duplication, would facilitate the working of institutions as they would not be required to look to a multiplicity of organizations for financial support.

(ii) Over the years, there has been some increase in government contribution both to the recurring and non-recurring income of the institutions of higher education. The major beneficiaries of the increasing government subventions are universities and colleges of professional education. In terms of the need for relating education to the production of scientific and technical manpower this is apparently a correct trend. However, its implications on the development of institutions of a general type would need to be carefully studied.

(iii) The central contribution to colleges of general education has not been very significant. The position becomes serious when it is seen that, in proportionate terms, even state government assistance has been on the decline. The main source of finance of these institutions is the student fees. The government seems to be content with providing paltry amounts out of its coffers and helplessly watching the mushroom growth of these institutions. This is corroborated by the study conducted by the author, which

suggestions could be made in this connection:

(i) The patterns and procedures of grant-in-aid should be clearly and unambiguously laid down and given wide publicity.

(ii) The term 'approved' income and expenditure may be defined in consultation with the managements of private institutions. A broad consensus about the definition may be worked out at the national level and introduced in different states with suitable modifications wherever necessary.

(iii) There need be no time lag between the establishment of institutions by private bodies and the availability of assistance from the government. In the recognition of institutions, however, sufficient care should be taken so that the haphazard growth of institutions could be checked.

(iv) Rules of grants should allow for innovations and experimentation. A mechanism of rewarding better performance—academic as well as non-academic—through incentive grants may also prove useful.

(v) To encourage institutions to raise local resources, provision for giving incentives to those which mobilize their own resources may be made in the grant-in-aid rules.

(vi) Universities should insist upon the fulfilment of certain minimum conditions particularly in respect of reserve fund, buildings, equipment etc, before a private college is granted affiliation. The state government which is expected to offer financial assistance for its development should be consulted. The final authority for grant of affiliation should be the chancellor who is generally the head of both the university and the state government.

(vii) The University Grants Commission should strictly concern itself with providing assistance for the improvement of colleges and universities, and not for peripheral activities. It may provide full assistance in respect of a few very important schemes. In other cases, a system of matching contribution by the state university institutions may be worked out.

(viii) Maintenance grants should be given on a 'block grant' basis. Institutions should be told in advance about the quantum of assistance to be made available for their maintenance for a specified period extending from three to five years. Account should be taken of the likely increase in the cost of the educational expenditure including salaries during the period of the grants.

mechanism for mutual consultation. Consequently, growth of higher education is bound to be haphazard. Besides, it is not possible to achieve inter-disciplinary coordination—so necessary for the integrated development of higher education. The U.G.C., the main instrument of central government for the coordination and determination of standards, has an extremely truncated responsibility. Its writ does not run beyond education of a general type. Moreover, it is hedged with many obstacles arising out of the restrictive nature of some of its functions, as laid down in its Act or forced on it by circumstances. All these factors limit the fulfilment of the crucial role assigned to the U. G. C. The following suggestions have been made for streamlining the financial administration of higher education:

- (i) bring all higher education under the purview of the U.G.C.;
- (ii) decentralize the working of the U.G.C. so that it could keep itself better informed of the financial needs and level of development of institutions of higher education;
- (iii) establish state university grants committees. The intention is, among others, to interpose academic organizations between state governments and university institutions in different states—the principle on which the central U.G.C. has been founded.

PATTERNS AND PROCEDURE OF GOVERNMENTAL GRANTS TO INSTITUTIONS OF HIGHER EDUCATION

State government grants for various types of institutions of higher education are based on widely varying patterns and procedures. The system lacks specificity and dynamism and is largely attuned to a rigid institutional pattern which makes innovations and experimentation difficult, if not impossible. The 'deficit' grant system, which is generally in vogue, dampens the enthusiasm of private bodies to raise their own resources. The system has also no mechanism of rewarding good performance. The rules of affiliation framed by universities* also lack specificity. The grant-in-aid system will need substantial changes to be an effective mode of goal-oriented institutional development. The following

*The study was confined to 50 universities.

to be in setting up of colleges of general education, where three out of every four colleges are under the control of private bodies. In professional education also, about 50% of institutions are managed by private bodies. Relatively speaking, however, there has been some diminution in institutions managed by private bodies during the post-1947 period.

It has been found that financial contribution from private sources is not commensurate with the number of institutions managed by these organisations. Further, private benefactions have shown a downward trend during the years under study. An analysis of financial contribution from these sources in different states indicates substantial variations—the range being 2.8% of the total direct expenditure on higher education in Assam and 28.6% in U.P. The dwindling private contribution is, however, not peculiar to India, but represents a worldwide phenomenon.

Private contributions, though diminishing in relative terms, are an important means of university finances and therefore, need to be stimulated. The following important measures could be suggested:

(i) There should be no ceiling on contributions from individuals/corporations to qualify for income-tax exemption.

(ii) Private bodies may be required to contribute a portion of their profits for educational development through central and/or state legislations. Industrial concerns may also be asked to pay a levy for technical education. They may also be required to provide for the practical training of engineers and technicians under qualified supervisory staff at their own cost. They may be encouraged to 'adopt' some institutions and pay for their total cost.

(iii) Grant-in-aid rules of the states may be liberalized so as to encourage private bodies to set up institutions.

(iv) Educational institutions, to attract private benefactions, should establish rapport with the community around them; through their achievements in curricular and co-curricular fields, undertaking social service and organizing parent-teacher associations.

(v) A part of the wealth of religious bodies—which seem to have substantial sources of finance—may be appropriated for

Such a grant should be 'unearmarked' and universities and colleges should have the freedom to make necessary changes to suit their requirements. The development grants, however, may be earmarked and given for specific projects. Schemes like construction of staff quarters, hostels etc., which are expected to bring in some monetary returns, should be assisted through loans to be repaid in easy instalments.

SOME POLICY ISSUES

A discussion of certain basic questions of policy relating to financing of higher education has been attempted below:

(a) Central/State Responsibility in Higher Education

The Constitution of India has devolved a definite responsibility on the central government for the coordination and determination of standard of higher education. There is a strong need for closer collaboration between the central and state governments in providing assistance to institutions of higher education to ensure a harmonious development of higher education. This is also necessary because indifferent financial resources of the states are not always able to finance programmes of expansion and improvement of higher education. The central government, however, should mainly concentrate on qualitative improvement; setting up experimental institutions having 'seed value'; scholarships for post-graduate education and research and establishment of institutions to study problems of national importance such as space research, inter-linguistic research and so on.

The states should concern themselves with the expansion of and improvement in collegiate education, particularly at the undergraduate stage. This can be done through liberal assistance to private agencies for setting up institutions of higher education. The states may also set up their own institutions generally in fields in which private enterprise is either unwilling to participate or is not forthcoming in an adequate manner. These institutions should, however, be models of efficiency and worthy of emulation.

(b) Optimising Private Contributions for Higher Education

Private bodies have made a sizable contribution in the setting up of institutions of higher education. Their main interest appears

(d) Student Aid Programmes

An important pre-requisite of the 'differential' fee system is the extension of the student-aid programmes. The question to be considered is whether student-aid should be in the form of outright grant or loans. Various difficulties are likely to arise from the implementation of loan assistance programmes in India because of the uncertain employment situation and low parental incomes.

The conclusion is that, in the Indian situation, the loan assistance programme will have limited operational validity, particularly for students pursuing courses in humanities. Loan assistance could, however, be introduced for professional education where the possibilities of students getting employment are brighter. There is need for setting up an autonomous organization to coordinate the various scholarship programmes in the country. In any scheme of scholarships, utmost speed and efficiency can hardly be overemphasised.

educational purposes through persuasion, if possible, and legislation, if necessary.

(c) '*Fee Policy*'

Fees constitute the second largest source of higher education finances after the government. The present fee-structure, however, gives an indiscriminate subsidy* to all—irrespective of their capacity to pay. The question of raising fees has to be examined from the social, political and economic angles. The practices in other countries in this regard are highly dissimilar and offer little guidance. The conclusion that has emerged is that, theoretically, there is a strong case for raising fees in institutions of higher education. In the context of the present Indian situation, however, very few state governments are likely to take this step for fear of popular antagonism. In view of these considerations, a 'differential' fee system could be attempted. The main constituents of this system are:

(i) On the basis of the school final examination, special admission tests and the cumulative records of achievement at the secondary stage, the students should be categorized as (a) 'university types'—those capable of benefiting from higher education and (b) 'non-university types', that is those incapable of adequately profiting by higher education.

Students of category (a) may be charged the usual fees and may be given scholarships, if necessary. If students in category (b) wish to join institutions of higher education, they should be charged fees on the 'cost of service' principle. In the initial stages, a liberal interpretation of this policy, particularly in favour of the backward sections would be necessary. An essential concomitant of this policy is larger provision for vocational courses at the secondary stage and extension of education through correspondence at the university stage. It is expected that this policy, besides bringing in larger revenues to institutions, will also keep the enrolment in institutions within manageable dimensions.

*It has been reckoned that on an average, the amount of subsidy worked out to Rs. 480 per student in 1965-66 in the case of affiliating and teaching universities. The amount of subsidy was much higher in the case of residential teaching universities.

hope to get away smoothly with what they demand as an essential condition for their proper functioning. It may be useful to explore the possibilities of introducing institutional devices which, while helping universities to streamline their functioning, will serve to cushion off the political or mass pressures increasingly experienced by universities.

Finance of universities and colleges is a relatively neglected field in the discussions of Indian higher education. What is usually said about it is reducible to a few simple propositions. Universities do not have sufficient funds; this is almost axiomatic and has little to do with the purposes for which funds are needed. Any assessment of purposes from outside impinges on the autonomy of universities; government grants must increase and so must the freedom of universities to use them. Different methods of determining grants have to be judged in the light of this twofold criterion. Financial accountability only signifies a proper observance of procedures in incurring expenditure.

All this may be reasonable but it can perhaps no longer suffice. Those who pay the universities are generally insufficiently equipped to appreciate their role in national life and therefore do not refrain from calling the tune. Moreover, higher education is expensive; its financial needs are continually growing. No representatives of society can be expected to meet these needs and yet remain unconcerned about what they are helping to achieve. In a poor society, an institution demanding public funds in a growing measure is bound to come in for public scrutiny. That its purposes and those of the society it serves can be better realized by its being left alone is a proposition which cannot be merely asserted; the university must justify itself in terms of its achievements and activities.

Both politicians and university administrators seem largely to speak at each other today without any sense of urgency. The politician, especially of the ruling variety, often believes that higher education is in no way his responsibility. The university, in his view, is both a citadel of privilege and a factory for producing clerks at the same time. Since it claims autonomy, its affairs are its own concern and the ruler cannot be held responsible for its failures or shortcomings. Aware of this attitude, the university administrator persists in demanding funds, non-availability of which generally serves him as an excellent alibi for his shortcom-

University Finance: Problems and Procedures

G. D. PARIKH

The purpose of this paper is to examine briefly some aspects of the problem of university finance and to offer a few suggestions in the hope of breaking ground in dealing with it. The paper is informed by the belief that university autonomy is an important principle. The narrow limits within which Indian universities enjoy it at present can be expanded by the efforts of the universities themselves.

Mere assertions of autonomous status will not be enough. Such assertions, when they do not assume a demagogic form, can only be for the present a pious expression of the aspirations of the academic community. Challenging or deriding politicians, whether those in power or in the opposition, many actually make matters worse so far as the universities are concerned.

Possibilities of future advance seem to lie in educating the masses. One way of doing this is to have a good look at ourselves and to present a better image of ourselves to the community. Thus alone can the community be made to realize that technical administrative efficiency is a concept of limited applicability in the case of universities. Even then it is a moot point in the present mood of the community, when everything is challenged and nothing is spared, whether universities can

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cians in good humour.. The fixed term of three or five years for the vice-chancellor seems to be useful, for no vice-chancellor can go on doing this for a long time. Such honourable exceptions as are there only prove the rule. By and large, however, the present position encourages not only an after-me-the-deluge outlook but also a certain measure of irresponsibility in university expenditure. An authoritarian pattern of behaviour can get built into an institution which claims freedom for itself and seeks by definition to promote it in the intellectual life of the larger community.

Can this situation be changed? Can universities develop alternative sources of income as a corrective to the growing influence of government? The fact that government influence is often uninformed or motivated by non-educational considerations clearly underlines the need for a corrective. But there hardly seem to be any significant possibilities in that direction. The nature of philanthropy is gradually changing. While the old tendency was to place funds at the disposal of those who knew how to build and conduct educational institutions, the present approach of men of means is to start and run the institutions themselves..

With the expansion of education, the significance of a college as a source of power or a centre of public relations has grown, and the politician and the financier now think of employing the educator instead of entrusting the job to him. Taxation policies also lead to a drying up of the private sources of educational finance. Besides, the tendency to offer private resources for specific purposes and not by way of general support has all along been there and still continues to hold the field. Because Indian universities were for a long time mere examining bodies, their endowment funds were generally tied up with the recognition of achievements in examinations and not with lowering of the cost of education to the student. Private philanthropy did appear for some time to progress from founding a college to the founding of a university, but the tendency disappeared before gathering any momentum.

The need to initiate a change in the existing practices obviously cannot be denied. Again, total reliance on private philanthropy would not be desirable. There is no reason whatever for believing that such reliance will be more conducive to freedom. University support should come from as many diverse sources as possible,

ings. He will however reject as impractical any suggestion to develop alternative sources of support. He continually asks for more from those whom he does not expect to bother about or interfere with what he is doing. The overall situation is thus at best one of complete lack of communication and a steady drift; at worst, the university functions as a wing of the administration or an instrument of the powers that be. In either case, it is a dangerous situation.

It is imperative to improve this communication, for in its absence no efforts at reform or development can be effective. Steady and sustained support, so essential for implementing proposals of reform, may simply not be forthcoming. An attempt to evolve an agreed approach to problems is essential so that both sides may be aware of their commitments and responsibilities.

It is known that the American pacesetting institutions in higher education have for a long time been 'private' institutions; they do not depend on government support. It is also clear that with us there is no counterpart of the American 'private' university. Not that 'private' institutions in higher education were not started; but they either started receiving government support or got politicized. The general economic condition of the community is also a factor to be considered in this respect. While private institutions at the primary or the secondary level could be sustained through higher tuition fees, it was almost impossible to expect this in the sphere of higher education. Strictly independent or private institutions came to signify at the higher level unconventional, idealistically motivated institutions, administering programmes generally of a lower quality. They are now seeking to get into the university stream. India's 'private' pace-setting university still remains a dream.

It is needless to labour this point. But the overall situation has an element which deserves to be properly understood and analyzed. A vice-chancellor may spend lakhs during his tenure of office but neither he nor his colleagues have the responsibility of raising a penny. He has, first, to be a person of the right kind; the appointing authority will generally take care of this. Secondly he must keep on the right side of the right persons in power. Those who are in the university also realize that they can often get the necessary support by doing the same. The mode of raising university finances necessarily requires an ability to keep politi-

be easy to adopt this approach in a general way. But there need be no difficulty in experimenting with it and exploring its possibilities in some selected cases. It can open up the possibility of a much better understanding between the university and the community. It is the vacuum created by the absence of such understanding which the politician rushes to fill up at present. Mere sermons asking him to keep off the campus are not likely to be of any help.

An effort to justify university programmes and the expenditure to be incurred on them will necessitate, *inter alia*, some education of the community on the nature of university administration. This may not be an easy task. But it is essential that a beginning is made. An important difficulty may arise from the fact that what is important in the case of university is the attainment of academic objectives, not merely the efficiency of administration. The concept of wastage has a different meaning in the context of the university. What may ordinarily be described as wastage sometimes becomes indispensable for maintaining an atmosphere in which talent, when it appears, may have the opportunity to grow. No one can tell when it will appear or whether it will appear at all, but conditions have to be maintained for facilitating its growth. A poor country will certainly find it difficult to accept that not only has efficiency to be sacrificed to some extent for attaining goals but some of the goals themselves are of an intangible nature. This may create difficulties in laying down norms for administrative performance. It is nevertheless essential that the community should understand these features of university administration and thus appreciate the work of the university properly.

It may be easier to achieve this if a clear distinction is drawn between elements of university administration which are measurable and can be judged objectively and those which cannot be so judged objectively and those which cannot be so judged. Use of physical accommodation, of libraries and laboratories, participation in extracurricular activities are some of the cases in point. True, the conclusions drawn from some of these data may be of limited significance. But they can still be useful in improving the functioning of these institutions. Again, in a phase of rapid expansion of education, the need to obtain maximum returns from available resources is bound to be emphasized. While its legitimacy must be conceded, indiscriminate economies may actually

private philanthropy being only one of them. It can furnish a corrective or a balancing element and not be a substitute for government support. It can provide a climate for the improvement of communication between the university and the government without touching the problem of communication itself. Institutions of higher education everywhere in the world are increasingly coming to depend on the public exchequer and the relations between the two have to be rational and harmonious in the interest of the community.

There is no doubt that universities need more funds; it is equally evident that governments do not have enough funds to meet their needs. But it does not follow that government support should appear as an alternative to that of society. Higher education involves development of abilities and skills which are bound to be helpful to the individual concerned. But at the same time there are distinct gains for society from this individual development and its social and cultural consequences. The costs of higher education have therefore to be shared between them. Given limited resources, each is inclined to pass the burden on to the other. The argument that there should be no rise in tuition fees and that it is the business of government to support higher education acquires in this context a measure of plausibility. Since the numbers involved are limited, governments do not take the claims of universities seriously but at the same time would not want them to meet these through higher fees. Since they take this position as representatives of the community, it almost amounts to saying that the community is not interested in universities. I am not so much concerned here with the quantum of support demanded and the extent to which it is actually given. What is important is the argument involved. Although there are several sources of income for universities, the argument gains in significance from the fact that the two sources concerned—grants and fees—happen to be responsible for a major part of this income.

The question should rather be considered with the legitimacy of the needs of the university, and not the scarcity of available resources. The two agencies in that case will think in terms of supplementing each other's efforts. The university should be able to persuade the community to recognize the usefulness of its work and to pay for it. Whenever it is able to do so, government should also increase its assistance to the university. It may not

has been sanctioned by the University Grants Commission is sound for it. The actual adoption of one or the other of these approaches is largely influenced by considerations of available funds. Paucity of funds sometimes induces the government to begin coordinating developmental programmes arbitrarily on the basis of *ad hoc* advice and creates needless discontent. Sometimes it leads to an equally arbitrary refusal to share expenditure.

All these difficulties may be obviated by having a grants committee at the state level which can function in respect of the universities in the state in a manner comparable to the functioning of the UGC in relation to the central universities. Such a committee can be charged with the responsibility of promoting a co-ordinated programme of development of universities and colleges and of providing grants, both capital and recurring, for that purpose. It can also be in charge of the maintenance grants to universities and colleges. The UGC and the state grants committee can jointly process all developmental proposals in consultation with the universities concerned.

The number of universities and colleges has been growing rapidly for some time past and will continue to grow. It will be increasingly difficult for the UGC to keep track of these institutions and meaningfully to regulate their development. A change in the organization of the UGC, no matter how otherwise desirable, cannot be of much avail in this respect. While the UGC will certainly be concerned with the maintenance and improvement of standards, it can discharge its obligations much better with the help of the state committee rather than through direct dealings with universities and colleges.

The colleges, which one normally includes as parts of universities to which they are affiliated, present a somewhat different problem in respect of finance. There are colleges run by governments, by local bodies like municipal corporations, or by universities. These will have to be distinguished from what are generally known as private colleges. Generally, proprietary institutions are not permitted by universities. While university administrators may incur large expenditure they are, as pointed out earlier, under no obligation to raise any part of the funds they spend. The governing bodies of colleges, on the other hand, carry full responsibility in this respect. This explains the nature of the criticism often advanced against these two types of institutions. Universities,

do more harm than good. The spheres of university administration in which criteria of scientific management are genuinely applicable have therefore to be clearly distinguished so as to ensure satisfaction of legitimate popular feelings without weakening the basic work of universities.

The development expenditure of universities other than the centrally administered ones seems to present problems of a somewhat different nature. What is essential in these cases is an understanding among three agencies: the UGC, the State Government and the university in question. While the UGC may appreciate the developmental needs of the university, it can also be expected to consider them in the context of an all-India setting. It may also be useful to remember that its approach has been gradually shifting from merely sanctioning grants or functioning as a clearing house of information and experience to initiating academic activities and programmes in universities. The scheme of centres of advanced studies is a case in point. The area studies programme is another such case.

These schemes are generally financed on a different basis from those that are submitted by universities themselves. But, first, they presuppose the necessary keenness on the part of the universities concerned to undertake the schemes, for liberal financial provision alone cannot ensure their success. Secondly, this mode of financing may sometimes involve diversion of the attention of universities in directions which, from the standpoint of their responsibilities as state institutions, may not be very important. Thirdly, it is obvious that for developmental proposals submitted by universities the points of view of the state governments and the individual universities assume decisive significance.

Difficulties have often arisen because of the attitude of state governments. Their views are not available expeditiously. They do not provide the matching contributions or accept the responsibility of continuing the schemes after UGC support has ceased. The Education Commission has cited several examples of this kind. The reasons can be of two types, academic and financial. The government often does not have the machinery to evaluate a scheme in the context of a properly co-ordinated programme of university development in the state as a whole. It may therefore be influenced by *ad hoc* considerations, if not by altogether irrelevant ones, or be willing to accept that whatever

tion and will be unable to undertake such inspection of colleges, leaving the universities alone. The machinery that discharges this function must be a part of the university system and the state grants committee may provide a way out.

Such a committee can provide an answer to yet another question. The powers of affiliation and disaffiliation, in almost all cases, finally rest with the government and not with universities. The universities have often argued that this involves a serious encroachment on their legitimate authority. Governments have however paid no heed to the complaint. One important argument in this respect has been that the university, by affiliating a college, creates an additional financial commitment for the government, and that therefore the latter must have a say in the matter. The argument sounds plausible. But in actual practice, it has been completely defeated.

Given the minimum facilities and arrangements, there is no reason why the university should come in the way of an institution being started; in fact, it is much less equipped than the government to meet the pressure that refusal would sometimes generate. The universities therefore tend to be liberal or free in this respect, leaving it to the government to refuse affiliation if it wishes to do so. Once the die is cast in this manner, it is not easy for government to come to a negative conclusion. Thus an instrument of regulating the growth of higher education is reduced to an empty formality. The state grants committee may provide an answer to this problem. If it is a statutory authority, it can exercise a measure of control in regulating the growth of institutions on a rational basis and at the same time help those that have come into being to attain operational standards conducive to qualitative improvement of higher education.

It is needless to go into the constitution, powers and functions of the state grants committee. Suffice it to emphasize that the committee must not be at the mercy of the different pulls which dominate state politics today. It should have sufficient powers to discharge its duties and obligations and should be free from day-to-day interference by the government. The work of the committee can come for discussion in the form of a report which may be placed before the legislature. The discussion on it can be available to the committee for its guidance.

Political pulls operate not only at the Union level but also in the

it is said, are lavish and squander resources; colleges, on the other hand, are generally miserly; they never spend enough, even for purposes which are academic. If the commitment of the public exchequer by way of grants is clearly defined, the skill in financially administering a collegiate institution often seems to lie in so adjusting the expenditure as to maximize the surplus of income, including the grant, over expenditure. There is another point of difference between the two. While universities do not like to have their expenditure scrutinized or regulated by any outside agency, the major items of expenditure in the case of colleges are clearly regulated by the university, in any case until a college gets permanently affiliated to the university. Even after such permanent affiliation, it does not become free from the control of the university. Thus emerges a rather peculiar feature of the college as an organization. Its academic activities are regulated by the university while its expenditure is scrutinized primarily by the government for determining the quantum of grants. The university demands facilities in colleges without contributing to their creation in any manner. The result is an inherent weakness in the control exercised by it. The government contributes to the expenditure incurred by colleges but it has no powers of inspection. The result is its normal reluctance to help in an adequate measure.

There is yet another aspect of this problem which seems to be assuming an increasingly serious form with the expansion of education. As enrolment goes up, existing institutions tend to grow in size, with a growth in the spirit of commercialization and financial manipulation. It is true that in the case of one university, such a growth has taken place quite indiscriminately. In many cases, however, what has taken place is a rapid increase in the number of low-cost institutions. This is true of some cities and most of the rural areas. And if rural children are to derive the benefit of higher education which has been taken to them, rural colleges will have to be properly upgraded. There is every need for making extensive use of the method of earmarked grants for achieving this object. But government cannot do so for the simple reason that earmarked grants will obviously necessitate institutional inspection and not merely a scrutiny of the accounts. Such inspection cannot be undertaken by any government without prejudicing university autonomy. Besides, the government will not have the personnel for inspecting institutions of higher educa-

Part Three

Education as Investment

state. In fact, pressures in the states would be much more direct and difficult to resist, and nothing could be worse than a committee subjected to them. The creation of such a committee will therefore place a tremendous responsibility on state governments. But the experiment, if properly conducted, can also bring distinct gains in terms of improvement of higher education in the states.

Manpower Requirements

J. VEERARAGHAVAN

The Education Commission¹ observed in June 1966: "If the present rate of expansion (10% a year) is assumed to continue for the next 20 years, the total enrolments in higher education would be between 7 and 8 million by 1985-86 or more than twice the estimated requirements for manpower for national development. An economy like ours can neither have the funds to expand higher education at this scale nor the capacity to find suitable employment for the millions of graduates who come out of the educational system at this level of enrolment."

In the five years after these observations were made, the rate of expansion has increased² rather than decreased.

Year	Total enrolment in higher education (in millions)	% increase over the previous year
1965-66	1.73	12.1%
1966-67	1.94	12.7%
1967-68	2.21	13.9%
1968-69	2.47	11.5%
1969-70	2.79	12.9%
1970-71	3.11	11.5%

¹Para 12.10 Page 557, *Report of the Education Commission 1964-66*.

²Page 119, *Pocket Book of University Education 1972*, (U.G.C., New Delhi).

and desiring to pursue studies, but also urged that measures be implemented to steer students away from higher education.

The fact is, however, that there has been a large and unregulated increase in enrolments. The issue is no longer one of whether there should be restrictions on enrolments, but how such restrictions are to be implemented in a fair and just manner.

Planning for higher education under a policy of selective or restrictive admissions would require the determination of the number of places to be provided in higher education. Several approaches are possible in this regard: (1) the pool of ability approach; (2) the social demand approach; (3) the rate of return approach and (4) the manpower requirements approach.

The premise in the 'pool of ability' approach is that ability and talent vary from person to person and the restricted number of college places should go to those best fitted to utilize them. The Education Commission thus suggested the following criteria to determine enrolments.

(1) The goal should be to provide higher education to all talented students—the top 5 to 10 per cent in an age group.

(2) The capacity to provide facilities, such as qualified teachers, should be a limiting factor.

(3) Manpower requirements should guide educational enrolments.

The first of these three criteria is based on the pool of ability approach. But the figure of 5 to 10% is arbitrary and the variance is too large to provide a norm for planning. Further it is effectively restricted by criteria (2) and (3). In other words criterion (2)—the availability of resources—and criterion (3)—manpower requirements—are the real determinants of the total number of places to be provided. Criterion (1)—the pool of ability—can't be considered to be a determinant of the number of places only when the figure so arrived at is less than what is feasible under (2) or (3)—a situation not likely to arise in the near future.

The 'pool of ability' argument is an important consideration in determining who should get admission to colleges. The implication is that only those who can profit by college education should be admitted. Since equalization of educational opportunity is a major goal of our policy, there may often be a serious conflict of this goal with the pool of ability criterion. But it is indisputable that universities and colleges should lay down minimum eligibility

"Though we could not" according to the Education Commission, "afford a 10% annual rate of increase we live with a 12% rate of increase." Are we living then beyond our means in this sector?

Implicit in the Education Commission's assessment was the assumption of a growth rate in National Income of 6.6% from 1961-1970 and 7% from 1971-86. The actual growth rate in national income from 1960-61 to 1968-69 was only 36.5% or about 4.5% per annum. It may be argued that this average includes two or three bad agricultural years and does not reflect the impact of the Green Revolution. But even the Fourth Five Year Plan envisages a growth rate of only 5.5% during 1969-74 and 6.2% in 1974-79—much below that was envisaged by the Education Commission.

Here then is the crux of the problem of planning higher education. Economic growth is below expected levels. Enrolments in higher education on the other hand, if we accept the Education Commission's assessment, are far above 'expected' levels and already much beyond our capacity. In the long run, however, the commission's assessment would certainly not be valid. The number of persons enrolled in higher education per thousand of total population is still far less than in most developed nations. As such there would be a case for increasing the rate of growth in enrolments from this comparative standpoint. The kind of self-generating and self-reliant economy we aim at needs a very large number of research and technical personnel and a large population with high educational attainments. Social justice also demands that access to higher education should be available to sections of people hitherto deprived due to historic, social or economic reasons. But we cannot ignore the short-term constraint on resources.

It is not surprising that there is no agreement concerning the desirability or feasibility of restricting entry into higher education. While the Education Commission strongly favoured restrictive admissions and noted that opposition to the concept was diminishing, a committee of Members of Parliament argued that discussion of restriction was premature and that what was needed was a more serious consideration of the alternatives for secondary school graduates. The committee favoured providing educational opportunities beyond the secondary level to all those able to

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(4) Finally we decide on assumption about the future length of study.³

In essence the assessment is based on past trends allowing for corrections based on judgment. The Robbins Commission expected that the growing and better primary and secondary education, increasing national prosperity and improved educational standards of parents would contribute to a substantial growth in the demand for higher education in the United Kingdom. All these factors operate with even greater force in India and contribute to the enormous pressure for college admissions.

The 'rate of return approach', as available resources constitute the major constraint in expansion of higher education, is conceptually and logically the most attractive tool to determine the number of places to be provided. If resources required for higher education are treated as 'investment' on the cohorts and the future lifetime earnings of the cohorts (over and above what they would have earned but for higher education) as the 'return', it is possible to calculate the current rate of return on investment after discounting the future earnings appropriately. Resources can then be allocated to higher education in such a way that the rate of return thereon equals the rate of return on any other alternative investment such as on primary education, adult literacy, agriculture or commerce. This well-known equimarginal optimisation principle of economics is simple enough, but difficulties arise as soon as we try to assess the additional earnings of a lifetime attributable to higher education.

All the benefits from higher education do not accrue to the individual. Some accrue to society. The private rate of return may thus understate the benefits. And the 'social' rate of return is none too easy to calculate. Income earnings depend not only on educational level, but on ability, motivation, family status, chance and several other factors. The economists who have worked in this field attribute a certain percentage of earnings to higher education, but the basis of such 'notional attribution' is often questionable.

The computation of extra earnings due to higher education would be meaningful only in an economy where prices are rational

³Report on Higher Education, 1961-63. (The Robbins Report), London: HMSO, 1963, p. 55.

requirements and adhere to them.

Strict enforcement of essential eligibility requirements at college level combined with reforms of examination system at high school level will go a long way in lessening the pressure for admissions in colleges and in improving the calibre of cohorts entering the higher education stream. If relaxation of eligibility requirements for any group of students is made on broader considerations of social justice it should be obligatory to provide additional tuition and other facilities to ensure that those who do not fulfil minimum requirements are brought up to the desired standard within a specified period.

The social demand or demand for places approach may mean that we provide that number of places as are effectively demanded. This is not the same as a policy of unrestricted admissions. Under a policy of unrestricted admissions the state would take on itself the responsibility of providing an adequate number of places in colleges irrespective of the students' ability to pay for college education. Under the social demand approach, the state permits as many colleges to be started as can fend for themselves. Those who can 'buy' higher education are allowed to buy it.

The Robbins Commission on Higher Education in the United Kingdom (1961-63) adopted 'the demand for places approach'—but not on the basis of an individual's ability to pay for higher education. The concept of demand for places is developed by the Robbins Commission is based on the principle of developing a pool of ability, i.e. "all young persons qualified by ability and attainment to pursue a full-time course in higher education should the opportunity to do so." In estimating the likely demand for places the Robbins Commission adopted the following steps:

- (1) We first look at the size of the age group relevant to higher education.

- (2) Then we estimate what proportions of these age groups are likely to reach the level of attainment appropriate for entry.

- (3) We next consider how many of those so qualified should be assumed to enter. This in effect involves two assumptions:

- (a) How many will try to enter higher education, and

- (b) What proportion of applicants with given attainments should be given places (degree of completion).

from 10.5% to 7.9%. For the postgraduate stage, however, the commission suggested that the rate of growth be slightly accelerated from 11 to 11.5%. The commission recommended that these estimates be revised from time to time and be prepared for each state and that suitable machinery be set up for the purpose.

How is it that the Robbins Commission dealing with a much smaller and less complex situation and with better and more reliable statistics found the manpower requirement estimates not a very reliable guide for educational planning, while the Education Commission dealing with a vastly more complex situation and with inadequate statistics still relied on manpower estimates as the basis for its recommendations.

Perhaps the Robbins Commission operating in a relatively stable situation preferred the more precise estimates of demand for places by projecting past trends in educational enrolments with modifications here and there to the uncertain estimates based on manpower requirements. The Education Commission in India was on the other hand dealing with a situation where past trends were not a sure or desirable guide for the future. They needed some norms as a guide and seized on manpower requirements as the best available.

Undoubtedly there are difficulties in manpower planning and in linking the same to educational enrolments. These difficulties can be appreciated if we look at the underlying assumptions of the estimates prepared by the Indian Statistical Institute and the London School of Economics for the Education Commission. *The estimates commence with the country's stock of educated manpower in 1961 derived from the 1961 census and a special tabulation of the National Sample Survey.* There were at that time 5.2 million workers with qualifications equivalent to matriculation and above. Two-thirds of these were in towns and the rest in rural areas. Over half were employed in other services (public administration, education, etc). About one in five (1.1 million) were graduates. Only one lakh were in manufacturing industries.

Two broad methods were used to assess the number required in 1976 and 1986. One method was used for manufacturing industries and the other for services.

For industries, the overall growth targets of national income were broken up into sectors which vary from 11.85% for factory

and reflect accurately the relative value of goods and services. This is clearly not the case in India, where many extra-market factors operate.

However attractive conceptually, the rate of return analysis cannot by itself be an adequate tool for determining the extent of investment in higher education though one may readily admit that the analysis, used with caution, would prove a valuable guide.

It is the fourth approach of manpower requirements that is of greatest value in the Indian context. Like other approaches this too has its limitations. Indeed the Robbins Commission in the U.K. categorically declared:

In principle the problem of estimating the number of places required can be approached in two ways: by considering what supply of different kinds of highly educated persons will be required to meet the needs of the nation or by considering what the demand for places in higher education is likely to be. We have decided that the second approach presents the sounder basis for estimates. We have found the first approach unpracticable for while it is possible for a number of professions and over the short term to calculate with a fair degree of precision what the national need for recruits will be, we have found no reliable basis for reckoning the totality of such needs over a long term.

Reporting three years later in the Indian context the Education Commission had no such doubts. Posing the question as to what would be the enrolment policy in higher education in the next twenty years, the Education Commission stated, "Our recommendation is that the expansion of facilities in higher education should be planned broadly on the basis of general trends regarding manpower needs and employment opportunities."

Specifically based on a joint study by the Indian Statistical Institute and the London School of Economics, the Education Commission projected an enrolment target of 2.2 million by 1975-76 and 4.1 million by 1985-86 in higher education. The commission further recommended that the annual rate of expansion of enrolment in arts, commerce and science at the undergraduate stage be reduced from the prevalent 9% to 5.3%; and in professional education, including teaching and law, at the undergraduate stage

How nice and firm these figures look. Behind them are several assumptions: on rate of growth of income of the different sectors of the economy; on the ratio of educated manpower to net output; on educational qualifications needed for the jobs, the extent of work-participation by the educated manpower; attrition of manpower stocks; and on wastage and dropout in the educational system. And above all there are assumptions on feasible norms regarding medical, teaching, research and services personnel.

The application of manpower requirements approach would require that each of these assumptions be most carefully investigated and brought as near reality as possible. Further there would be need for constant revision of estimates and a feedback system that would take note of every deviation from expected paths and to make timely adjustments. But with the best arrangements in the world one can only minimize the gaps between the expected and actual requirements. One cannot altogether eliminate the gap as, in an age of technological change, future is always uncertain.

We can lead the horse to the water but can we make it drink? We may provide the required alternative educational courses but can we persuade students or their parents to prefer a vocational course to a general degree in higher education? Or can we prevent a graduate qualified in one field utilizing his talent in another (internal drainage) or exporting it abroad (brain drain)?

It is the task of manpower planning to deal with these issues and no planning of higher educational enrolments would be complete without a planning of appropriate incentive-disincentive systems. The analysis of need, demand and supply of educated manpower—as of other manpower—should reveal the needed changes in policy. Let us consider the very useful hypothetical model presented by F. Harbison.⁴ (see Table Page 100)

The divergence between need and demand is very familiar in India. There is 'need' for vocational courses at the end of secondary education, but not 'the demand'. The creation of supply facilities will not solve the problem of lack of demand. One must go to the root causes of attraction for the degree and for college education and take steps to correct the causes. Vocatio-

⁴ Harbison, *Educational Planning and Human Resource Development*, (Paris: UNESCO, 1967), p. 19.

establishments and 11.24% for construction to 3.86% for agriculture. The manpower required was calculated on the assumption that the ratio of employment of educated manpower to net output will remain constant. For services, each major service was treated separately. It was assumed that the requirements of public administration and defence will increase at 4% a year. The demand for teachers was derived from enrolment estimates and assumptions about pupil-teacher ratios and teachers' qualifications. The need for medical personnel was based on one doctor for 3,000 population in 1975-76 and one per 2,000 in 1985-86. Legal and business services were assumed to grow as fast as the economy as a whole. Recreational and personal services were assumed to grow a little less. For all the remaining services, the growth of 3% a year was assumed up to 1976 and 5% thereafter. On this basis the number of medical workers required was expected to increase from 5.2 million in 1961 to 16.6 million in 1976 and 32.6 million in 1986. Graduate workers were expected to increase from 1.1 million in 1961 to 3.3 million in 1976 and to 6.5 million in 1986.

Not all matriculates and graduates would, however, be workers. Some would be unemployed, some might remain students and some would be housewives. It was assumed that the participation rate i.e., the proportion of educated men and women at work, will remain the same as in 1961. On this basis the total stock of educated manpower requirement for future years was arrived at. From this the annual outturn of matriculates, intermediates and graduates required was worked out.

These annual outturn requirements were then converted into educational enrolments on the basis of observed relationship between enrolments and outturn in 1961, allowance having been made for the various recommendations regarding pattern of education, length of courses, wastages, etc. Finally the commission arrived at the following enrolment level:

	1975-76 (in millions)	1985-86 (in millions)
Matriculation	12.6	24.3
Intermediate	3.6	6.8
Undergraduate	3	6.2

Some may take a long time, such as changing the values attached by society to particular jobs.

It is possible to sum up the arguments made in this paper in a few points:

Imbalances as between demand, need and supply might be corrected by measures such as those outlined above. Necessary and desirable as these measures are, they offer no solution to the basic structural imbalance when an economic system is unable to absorb the products of the educational system. In theory, enrolments in higher education could be contained if higher secondary education is vocationalised. But which young man or his guardian would willingly choose a vocational course unless there is a reasonable guarantee of a satisfactory employment on completion of the course? Nor is the problem solved by the magic wand of self-employment. If the economy can support a certain quantum of jobs in a year, this quantum cannot be substantially increased through self-employment rather than through employment under another.* The essence of the matter is that both the economic and educational systems must provide adequate opportunities for the fast growing population. But to many the suggestion to restrict higher educational system merely because of the lack of growth of economic system would appear to be based on a perverse logic. It will be argued that if our young men cannot get jobs at the end of higher secondary stage of education let them get at least university placement, instead of being idle. From an individual's standpoint, there is something to be said for this, but from the country's point of view, the same total resources feed both economic and educational systems and funds cannot be diverted from the slower-growing system to the other. Even from the individual's point of view, there is no sense in postponing the problem of suitable employment, the years spent in the college being often no more than disguised waste of time, energy and funds. The solution lies in faster economic growth. But economic growth is a function not so much of 'capital accumulation' (as we used to believe), but of new knowledge provided by research and the capacity to use that knowledge in mastering the environment for better provisioning of society—a capacity that is derived from a

*This is not to deny the importance of initiative and enterprise in enlarging employment opportunities. This is the Kernel of truth in the form of self-employment.

<i>Occupation</i>	<i>Need*</i>	<i>Demand</i>	<i>Supply Facilities</i>	<i>Reasons</i>
Technicians and sub-professional people	Very large	Very small	Very small	Low status and pay; few opportunities for advancement
Teachers	Very large	Small	Small	Low status and salary
Scientists and Engineers, Managers and Executives	Large	Large	Very small	High status and pay. High education costs
Clerical and secretarial	Large	Large	Small	Escape from drudgery for women
Craftsmen	Large			
Doctors	Small	Very large	Very small	High status and income
Lawyers	Very small	Very large	Very small	High status; Overflow from other faculties

*Column 2 'Needs' are determined by manpower assessment and represent the country's manpower or educational requirements to meet specific social, political and economic goals. Demand reflects individual desires to prepare for a particular profession or trade, the desires for given types of education.

nal courses must be made attractive in terms of salary and status.

There may also be instances where the need and demand both exist but supply facilities are inadequate. The poor calibre of clerical and secretarial work in many parts of India is possibly due to lack of pre-employment training facilities. It would be interesting to assess the effect of lack of training facilities for marketing personnel on the slow development of markets and on the relative lack of multiplier effects of investment.

The situation where supply facilities are restricted due to high cost of education is rare in India owing to a fairly liberal policy of scholarships and subsidies. One can thus identify the lags in demand, need and supply and take adequate corrective action. Some of these corrective steps may be easy such as opening of new institutions or provision of scholarships. Others, such as reduction in salary differentials, may be more difficult to implement.

Scientific and Technical Personnel*

P. N. CHOWDHURY and R.K. NANDY

The national stock of qualified scientific and technical personnel (s. t. p.) passed the million mark in 1970. This development itself is not only a source of great strength for India's socio-economic structure, but poses a challenge to manpower strategists in particular and planners and administrators in general.

Scientists, engineers, technologists and doctors constitute service personnel devoted to the social and economic uplift of the country along with the other sectors of the working population. They sustain the socioeconomic machine of the country and are, in their turn, sustained by it. But their role in nation-building operates mainly on the intellectual and professional plane; this characteristic tends to cause their isolation from the bulk of other productive personnel and invests them with a certain unwarranted sense of dignity and pride. The special position of this community of intellectual labour vis-a-vis society is featured by a large social investment for their intellectual and professional development. It has been the practice that higher the level of academic courses pursued, the higher is the public subsidy for the student trainee¹. Judging from the scheme of social expenditure on education and training, one engineer may be deemed equivalent to thirteen matri-

*The authors are personally responsible for the views expressed in the paper.

¹ *Education Commission Report, 1964-66*, pp. 28-58.

certain amalgam of skills, values and attitudes which education is expected to impart. It is not so much the economic system but the educational system that is responsible for generating and sustaining the basic forces of growth. It is in the quality of educational and research effort that one must find an answer to the problem of basic imbalances in the rates of growth of population, education and the economy. But so long as the basic imbalances persist, there is no escape from containing the enrolments within available resources while stretching the resources to the utmost through part-time and correspondence education.

larger proportion than engineers graduating from other institutions.

(2) It is easier for IIT graduates to get admission to foreign universities, but it is also easier for them to get employment in India. Indian industries used to recruit engineers from the IITs upto 1967. The situation has changed since 1968.

(3) About 75% of the overseas IIT students had gone to U.K., U.S.A. and West Germany almost in equal proportions, i.e. about 25% each.

(4) Among those who have gone abroad after their education in the IIT's, about three-fourths had left the country within two years after their completion of the IIT course.

(5) According to the National Register study, about 58% of the overseas IIT graduates have returned to India compared to about 49% for all engineering graduates in the sample. Thus it appears that institutions like IITs have their own utilities for generating and adding to the nation's stock of excellent s.t.p. Large investments in such institutions help in skill formation of the nation in the long run.

Qualified scientists, engineers and medical personnel occupy a pivotal position in society and at any given point of time, higher the degree of malutilization the higher is the volume of social disaffection generated by the sections affected by imbalances. The impact of social tension is not necessarily localized but works both in backward and forward directions, i.e. in the backward direction, when students who constitute the would-be entrants into the labour force tend to develop a morbid attitude towards social goals and practices and in the forward direction when the already established sections become sceptical about their future development.

The inspiration for expansion of higher education, in general, lies in expansion of education at the undergraduate level. Postgraduate education is sought after by two categories of graduates—firstly, those proposing to enter teaching and research careers and secondly, those who failed to obtain for themselves remunerative jobs within a reasonable time. But the prime cause for the increased demand for higher education is the expectation for a better lifetime earning capacity, and the prospect of securing better jobs and higher social status.

Strict adherence to restriction of enrolment (for higher education) coupled with the implementation of vocational educa-

culates, and one doctor is weighed against twenty-one of them. Society's investment per capita on scientific and technical personnel is very high and its expectation from and demand upon them must, therefore, be many times more than that on unskilled or semi-skilled labour. Thus, any wastage appearing through lack of or deformed utilization of s.t.p. recoils heavily on social returns. Considering the question of net social return, higher education and research may turn out to be less remunerative compared to other areas of social investment and political pressure may be irresistible for cutting down seemingly infructuous expenditure in these areas.

Doubts are raised in certain quarters as to the wisdom of establishing elite institutions like IITs, ISI, AIIMS, etc. Their view is that graduates from these institutions, established and maintained at high costs, are generally the upper echelons of society and usually get a better deal in the employment market, thus curtailing prospects of the less fortunate from other institutions. Moreover, the problem of less than optimum utilization of s.t.p. is largely associated with the flight of trained manpower. In this connection the conclusions drawn in a recent study² of the migration of IIT engineers may be of some interest. The conclusions are quoted below:

(1) From the available data in the National Register, it appears that the IIT graduates in engineering are migrating abroad in may be observed from the following table:

<i>Educational institutions</i>	<i>p.c. of expenditure on fees</i>	<i>Average annual cost per pupil (Rs.) (Govt. Mgmt.)</i>	<i>Average cost per pupil (Rs) excluding fees</i>	<i>Index of Average Cost</i>
Secondary School Education	39.2	100.7	61.3	100.0
Colleges for Arts & Science	48.5	401.2	206.6	337.0
Colleges for Agri.	12.0	1218.7	1072.5	1749.6
Colleges for Engg. & Tech.	24.6	1074.4	810.0	1321.5
Colleges for Medicine	15.0	1551.9	1319.1	2151.8

Source: "Report of the Education Commission 1964-66"; Supplementary Vol. II, pp. 28-58.

² "Technical Manpower", *Bulletin of the Division for Scientific & Technical Personnel*, CSIR, Vol. XIII, No. 10, October 1971.

goals set for the educational system? If so, how to resolve those conflicts in the interest of short and long term needs? How to adjust the role of the educational system both as a supplier and user of qualified scientific manpower? On the demand side, what measures are called for in order that society can make the best use of the stock and newer addition of s.t.p.? How can it be explained that only 7% of postgraduate scientists find employment in industry?³ Though generalized studies are not lacking on the question of overall manpower utilization for economic growth, yet the problem of organizing microstudies, indicative of the steps that have to be taken for eradicating sectoral imbalances, has to be faced squarely. For instance, the Directorate General of Employment and Training, Ministry of Labour and Employment, has made a preliminary study of the manpower requirements under some restricted conditions. The Planning Commission has, however, not made any firm commitment regarding scientific and technical manpower needs at the micro-level. There is a need for evolving a mathematical model suitable to Indian conditions as a thumb rule for determining manpower need. Furthermore, training and formation of skill take time; so economic planning should be closely linked with high level planning for scientific and technical personnel.

This paper elaborates the pattern of utilization of certain segments of qualified s.t.p., utilizes some future projections for observing the estimated surplus or deficit say, at the end of the fourth plan, and brings to the fore the urgent necessity for introducing required transformation in certain aspects of educational and economic policies. In our present investigation the scope is limited to engineers, doctors, and postgraduate scientists (including agricultural scientists).

III

The utilization of highly qualified scientific and technical personnel has different dimensions; for example, stock and outturn (per year), the rates of growth of stock and outturn, size of present employment, future requirement and future supply, the resulting

³ P. N. Chowdhury & R. K. Nandy: "Towards Better Utilization of Scientific and Technical Personnel", *Economic and Political Weekly*, Vol. VI, No. 25, June 19, 1971.

tion at different levels, changes in syllabi and vigorous absorption of secondary stage educated manpower at various levels of the economic apparatus are the prescriptions for curing the malaise. Thus, planning (both short and long term) for optimal utilization of s.t.p. is important not only for its own sake, but should be taken up with all seriousness in the hope of decreasing the acute frustration, purposelessness, and stress on income evident in the younger generation.

II

The existing stock of s.t.p. is merely 0.4% of the total active labour force of the country. Dynamic planning favours a little surplus of s.t.p. to remain as a buffer stock, because development of s.t.p. requires time. Therefore, curtailment of admission capacity at the postgraduate level cannot be a remedial measure for checking the numerical growth of s.t.p. In the present educational system government subsidy to higher education is more than that to secondary education due to socio-political pressures. By initiating costlier higher education it may be possible to get nearer to the goal of universal secondary education by ploughing in more resources. Care should also be taken that needy and meritorious students are not deprived of higher education.

The extent and depth of utilization of s.t.p. hinge on a set of complicated and interconnected factors which converge, principally, on the demand and supply considerations of scientific and technical personnel. The demand for s.t.p. emanates from sectors like educational and research institutions, the service sector represented by the government (central and state) and the productive sector, both public and private. The source of supply comprises universities, research organizations and institutes of higher learning. Any policy measure designed to optimise the social use of s.t.p. must primarily take into account the present-day educational system and the policy for it as a basic datum.

Of course, the objectives of educational policy are not solely determined at a given point of time by the consideration of manpower utilization alone. It is important to know which aspects of educational policy are relevant and should be tapped for removing the present and future imbalances in manpower utilization. Does their reformulation come into conflict with other social

(2) So far as growth factor is concerned, diploma holders in engineering and technology show a sharp increase over the two decades; there is a slight increase for degree holders in engineering and technology and medical graduates; the growth factor of the postgraduate scientists, which is already high, remains stationary. The ratio of stocks falls slightly for science graduates.

(3) The overall growth factor in stocks for highly qualified s.t.p. (four categories under study) is slightly higher than that obtaining for all scientific and technical persons. This feature is mainly due to the phenomenal growth of diploma holders in engineering and technology.

(4) There is no change in the growth factor for postgraduate scientists from one decade to another. As a matter of fact there is a significant decline in the growth factor during 1960-70 compared to the earlier decade for disciplines like geography, geophysics, statistics only. One discipline (physics) shows higher growth factor in the sixties compared to that in the fifties.⁴ There is a marginal fall in the growth factor for agricultural scientists.

It is imperative to study how this rapidly growing number of skilled personnel is being absorbed into the mainstream of Indian society and what the shape of its projected supply and required demand appears to be, say, at the end of the fourth plan period. Do we expect a surplus or deficit in the over all supply position and in case of various categories? In what ways does the malutilisation of the employed sections of s.t.p. create serious problems?

How the employment market for s.t.p. changed during the census decade 1961-1971 may be realized from the tables on the following page.

It is well known that the information on manpower in general, and on scientific and technical personnel in particular, lacks systematic development and no two sources in this field agree on a single estimate. In this context, information presented in the tables may be read more as orders of magnitude rather than a presentation of exact details. Despite this general shortcoming, certain

⁴ K. Ray, *Scientific and Technical Personnel—A Monograph* (Census of India, 1961), p. 51.

deficit or surplus in the supply of manpower. The picture concerning the numbers of trained personnel is to be seen in the following table:

TABLE I

STOCK OF POSTGRADUATE SCIENTISTS, ENGINEERS AND MEDICAL PERSONNEL (IN THOUSANDS)

Sl. No.	Category	Stock at the end of the year			Growth factor	
		1960	1965	1970	1950-60	1960-70
1.	Science Post-graduates	51.40	93.40	152.70	3.0	3.0
2.	Engrs. & Techs. (Deg.)	62.20	106.70	185.40	2.9	3.0
3.	Engrs. & Techs. (Dip.)	75.00	138.90	244.40	2.4	3.3
4.	Medical Graduates	41.60	60.60	97.80	2.3	2.9
5.	Total	230.20	399.60	680.30	2.6	2.9
6.	All Scientific and Technical Personnel	450.00	731.50	1187.50	2.4	2.6
		(185.80)	(300.90)	(480.20)	(2.8)	(2.6)

Source: "Technical Manpower": Bulletin of the Division for Scientific & Technical Personnel, CSIR Vol. XII. No. 6, June 1970.

(1) All scientific and technical personnel include science graduates & medical licentiates.

(2) Figures in the parentheses under the last row are for science graduates only.

(3) Figures for 1970 are estimates.

(4) Growth factor is the ratios of the stocks (1960 to 1950 and 1970 to 1960).

The following generalizations may be made from Table I:

(1) Over the last twenty years, an explosion has occurred in the supply of all categories of s.t.p. The total number of scientific and technical persons has increased by 6.5 times (i.e. doubling in about six years); the science graduates, science post graduates, engineers (degree holders), medical graduates have shown increases by seven, nine, nine and six times respectively.

broad generalizations concerning the question of expected unemployment may be drawn from the foregoing tables.

(a) Employment prospects at the end of the fourth plan for s.t.p. are generally bleak, except the category of doctors (including licentiates). According to the Division for Scientific and Technical Personnel of the Council of Scientific and Industrial Research, the stock of doctors is increasing very rapidly due to higher enrolments and a reduction in the wastage rate. It is expected that "the target of one doctor per 3,700 population in the country by the Fifth Plan" will be achieved.

(b) The major problem veers round the employment of diploma holders in engineering and technology and postgraduate scientists. According to the IAMR Report on Engineering Manpower,² the ratio between the degree holders and diploma holders has changed from 100:129 at the end of the second plan period to 100:143 at the end of the third plan period. It can be expected to change further to 100:167 by the end of the fourth plan period and remain more or less stable thereafter if the intake capacity remains unchanged. Assuming this ratio among the future unemployment categories in the last column of Table III, it is observed that diploma holders will be very much in surplus supply, relatively speaking. A 1971 study³ shows that barring the mathematics group, the other science groups like physics and chemistry show high growth factor and the rate of outturn for these three groups is steadily on the increase. Outturn in geosciences rises at a lesser rate than that in pure sciences.

IV

A qualitative index for unemployment may be built up on the basis of the average period of waiting between acquiring the highest qualification and obtaining the first employment. Some ideas on the period of unemployment may be obtained from Census (1961) Monograph on Scientific & Technical Personnel. Similar information is available on a restricted sample in the Report on the Pattern of Graduate Employment (D.G.E.T.), 1963. A 1970 study³ develops the following observation on a sample of 1505

³ P. N. Chowdhury and R. K. Nandy "Pattern of Employment of Agricultural Scientists", *Economic and Political Weekly*, Vol. V. No. 25, June 20, 1970.

TABLE II

PERCENTAGE OF UNEMPLOYMENT IN SEVEN MAIN CATEGORIES
(ALL PERSONS)

Quantification/category	Census	
	1961	1971
1. Science Postgraduates	7.0	12.5
2. Science Graduates	16.3	23.7
3. Engrs. & Techs. Graduates	3.7	11.3
4. Engrs. & Techs. (Dip.)	6.9	14.7
5. Med. (Deg.)	7.3	5.4
6. Med. (Dip.)	8.6	5.6
7. Veterinary (Deg.)	2.6	6.1

Note : The table excludes retired persons.

Source : (a) *Census of India 1971*, Monograph Number I. (b) Technical Manpower, Bulletin of the D.S.T.P., C.S.I.R. Volume XIV, Number 4, April 1972.

TABLE III

PROJECTED REQUIREMENT (DEMAND), SUPPLY AND DEFICIT/SURPLUS
FOR DIFFERENT CATEGORIES OF SCIENTIFIC & TECHNICAL
PERSONNEL (IN THOUSANDS)

Sl. No.	Category	Projected Stock	Projected requirement (demand)	Deficit/surplus (—or+)
1.	Postgraduate Scientists ¹ (1973-74)	223.16	115.00	+108.16
2.	Engrs. & Techs. ² (Degree) (1974-75)	264.57	240.00	+ 24.57
3.	Engrs. & Techs. ³ (Diploma) (1975-76)	438.00	321.00	+117.30
4.	Doctors ⁴ (1973-74)	149.00	172.00	— 24.00

Notes : 1. Projected stock calculated on the assumption of 3.0 as growth factor of stock per year and development on the basis of 1965 figure in Table I.

Source : "India's Manpower Requirements—Some Preliminary Estimates", D.G.E.T, Ministry of Labour and Employment, p. 10.

2. Source : *Demand and Supply of Engineering Manpower (1961-75)*, Institute of Applied Manpower Research, (New Delhi-1) p. 13.

3. *Ibid.*, p. 14.

4. Source: *D.G.E.T.* p. 18.

5. Years in the parentheses indicate the points for which projections are valid.

TABLE V

MEDIAN DURATION (MONTHS) OF UNEMPLOYMENT UP TO APRIL 1971,
BY FIELDS AND LEVELS OF QUALIFICATION (PERCENTAGES OF
PERSONS SEEKING EMPLOYMENT)

<i>Field</i>	<i>Level</i>	<i>Median duration (months)</i>
Science	Doc.	10.4
	Master	11.1
	Bach.	11.0
Agriculture	Master	9.9
	Bach.	11.9
Veterinary	Bach.	11.7
Engr. & Tech.	Master	9.1
	Bach.	9.4
	Dip.	15.2
Med.	Master	7.2
	Bach.	8.5
	Dip.	18.5

Source; as in Table II, Source (b).

But more important than the spectre of unemployment is the problem relating to underutilization for s.t.p. and consequent psychological and other problems which may arise in affected individuals. Qualified scientists and engineers not only want appropriate status and financial incentives but, in addition, aspire for suitable placement in jobs justifying their special background obtained through formal education and experience so that they can contribute their best. But an analysis of their occupational pattern shows that the present occupational structure leaves much to be desired in this direction.

An all-India survey on the pattern of graduate employment was undertaken towards the beginning of 1960 by the Directorate-General of Employment and Training in order to bring out the relationship between the courses of study obtaining at college and the type of employment secured by the graduates. The survey was confined to university graduates who obtained degrees in the years 1950 and 1954. The survey observes that among science graduates "six out of ten were employed as professional workers, practically half of them as teachers, and 7% as administrative workers; only 3% were employed in transport and communication occupations, and 0.5% as production process workers."

agricultural scientists (postgraduates and above).

TABLE IV

DISTRIBUTION OF POSTGRADUATE AGRICULTURAL SCIENTISTS
(REGISTRANTS UP TO 1967) BY TIME-LAG BETWEEN HIGHEST
QUALIFICATION AND OBTAINING FIRST EMPLOYMENT

Time lag between highest qualification and first employment	Level of Qualification					
	Masters & Equivalent		Doctorate		Total	
	No.	P.C.	No.	P.C.	No.	P.C.
Less than 6 months	497	39.9	22	8.4	519	34.3
6-12 months	95	7.6	8	3.1	103	7.4
12-24 months	79	6.4	10	3.8	89	5.8
24 months and above	46	3.7	8	3.1	54	3.5
Employed prior to highest qualification	460	37.0	190	72.8	650	43.0
No record	67	5.4	23	8.8	90	6.0
Total	1244	100.0	261	100.0	1505	100.0

Notes: Above figures exclude research scholars and trainees.

Source: P. N. Chowdhury and R. K. Nandy, "Patterns of Employment of Agricultural Scientists," *Economic and Political Weekly*, Vol. 5, No. 25 (June 20, 1970).

Table IV pinpoints that 717 M.Sc's out of 1244 and 48 out of 261 Ph.D's experienced some time lag in obtaining employment. Seventy per cent M.Sc's belonging to this category could find jobs within six months, but the corresponding percentage for Ph.D's dwindles to forty-six. The situation on the other extreme, too, is relatively adverse to Ph.D's; seventeen out of 100 have to wait for employment for more than two years, while the figure for M.Sc's is six out of 100. As the period of waiting is viewed against specialization, it is observed scientists holding agricultural chemistry, extension, entomology and horticulture as specialities are able to find jobs faster than those specializing in agricultural botany, genetics, plant breeding, plant pathology and soil science. This is the relevant picture up to 1967.

An important aspect of any investigation of unemployment is duration of unemployment at certain points of time. Thus the 1971 census provides information regarding duration of unemployment of s.t.p. as of April 1971.

need drastic changes with more bias towards research and application. The same feature applies to statisticians.

(b) Only 6% of the total employment of postgraduate scientists is generated by industry (private or public) and the rest is provided, directly or indirectly, by government and educational institutions. Now the question is: how far is it possible and desirable to sustain the above pattern of employment? The number of postgraduate scientists is increasing every year by 15% and the rate is going to be steady. Employment outlets for this rising number have to be found more and more from within the economic mechanism of society and scientists should be made more useful by being drawn closer to the production apparatus.

(c) The opening of new branches under physics, like electronics and telecommunication, computer technology, space research and their industrial application have had some impact on the industrial employment for physicists. But compared to the rate of increase in the supply of these personnel, the industrial intake is tardy and the employment potential may get saturated soon.

(d) It is reported⁵ that 90% of the M.Sc's and 94% of Ph.D's in agricultural sciences are engaged either in teaching and/or research. But this does not mean, *ipso facto*, that there is no wastage of talent. It is surmised on the basis of a study of 1050 M.Sc's and 229 Ph.D's that as many as 40% of the M.Sc's and 4.36% of the Ph.D's lack appropriate specialization in their activities.

V

It is our considered opinion that the apprehension expressed in the Education Commission Report (1964-66) on the growth of educated unemployment among arts and commerce graduates may be equally felt for scientists and technical personnel barring medical graduates. The commission was careful in focussing the crucial relationship between the estimates of manpower needs and some aspects of educational policy, viz. (i) enrolment in secondary and higher education, (ii) enrolment needed in different types of courses, shortages and surpluses in the manpower situation and priorities involved.

In so far as M.Sc's are concerned, we find that eight out of ten were employed as professional workers. More than half of this group were working as teachers and one in six as physical scientists. Nearly 8% of the M.Sc's were involved in administrative jobs and 1% were clerks. Among Ph.D's 90% worked as professional workers (half of them being in the teaching profession) and slightly more than 6% were in administrative employment. This report states that 10% M.Sc's were engaged in non-technical work outside professional and managerial jobs.

Considering the above picture as representative of the situation in the fifties we may study the shift in the occupational pattern in the early sixties. The census monograph (1961) on scientific and technical personnel arrives at the following conclusions:

"The overall non-technical employment of all categories of scientific and technical persons enumerated was 18.6 per cent. The proportion is nearly 40% in case of science graduates and 16.7% for postgraduates. About 6.6% of medical graduates reported non-technical employment. Industrial employment of postgraduate scientists is 10% only. About 52.3% of the postgraduate scientists were working as teachers."

Industrial employment of postgraduate scientists further receded in the 1971 census when the proportion was found to be 6 per cent. The same census brings out the proportion of postgraduate scientists working as teachers as 63% which is about 10% more than the previous census.

The characteristic trends in the employment pattern over the last two decades that are visible may be detected as (i) non-technical and non-professional activities are gaining momentum, both among graduates and post-graduates, as their numbers multiply, (ii) the teaching profession is becoming more and more the main source of employment for qualified scientists, and (iii) industrial intake of science graduates and postgraduates is dwindling.

Recent studies^{3,5} on the pattern of employment of postgraduate scientists reveal that:

(a) For mathematicians, the high incidence of non-technical (administrative) work and that too in government departments, is a sure sign of wastage of talent. Openings for mathematicians in research and industry are very limited, which suggests that the present syllabi in mathematics in various universities

secondary) absorb technological manpower depends on several factors, such as (1) the scientific and technological content of economic growth, (2) a policy of self-reliance in the field of innovations, (3) advanced management practice, (4) rates of growth in different industries, (5) effective utilization of planning techniques in socio-economic development, and (6) incentive systems generated by the economy for effective utilization of s.t.p. In order to see whether sufficient interactions occur between the qualitative and quantitative indices of manpower growth and the development of these factors a series of empirical studies are called for.

Technological transfer vis-a-vis foreign collaboration of industries has a very important bearing on the utilization of local talents. Apart from the imperative need for strict scrutiny of collaboration agreements which involve foreign exchange and often import of foreign experts, encouragement should be given to local talents to adapt foreign technology to local conditions and social needs. Government sanction for the import of technical knowhow should be conditional upon utilizing local talents and helping in their further development.

Recent experience in the field of agricultural development teaches us that, apart from the price support given for different agricultural products, the promotion of research and development in this field and the implementation of innovations has paved the way for wide absorption of scientists and technologists in the agricultural sector. This very absorption has proved a catalyst in initiating a big breakthrough in agriculture. Thus, the work of scientists has ultimately supported itself in constructive results and has justified increased expenditures on s.t.p. in this area.

To sum up, we have indicated broadly the problems relating to unemployment and underutilization of s.t.p., the probable impact of surplus manpower at the end of the fourth plan, and the relationship of manpower growth with changes in the educational system on the one hand, and the statement of relevant economic and policy factors affecting the intake rate of s.t.p. in the economy, on the other.

The basic answer to the problems of planning for scientific and allied manpower centres around the issue of developing effective information systems in this field. Once this necessary condition is satisfied, it is possible to conduct future-oriented

The expansion of educational capacity (enrolment volume) depends on resources available. This sets the lower boundary for enrolment target; the social pressure for education and the need to develop the available pool of talents set the upper boundary of targeted capacity. However it is the consideration of manpower requirements which may be used to decide the actual target. In view of the manpower prerogatives the alternatives that are posed for educational planning in view of the manpower prerogatives may be listed below:

(i) Are we in favour of restricting the output of higher science and professional education in general (i.e. curtailment of enrolment) and, if so, what are the consequences thereof; or are we to strain the available limited resources for expanding the capacity at the cost of quality, etc.?

(ii) Are we to rationalize the distribution of enrolments in different courses following certain norms of expected demand for manpower or allow political and social pressure to prevail and create an unbalanced expansion in certain directions (e.g. pressure on physics and medical courses)?

(iii) Does the experience of manpower utilization lead us to advocate certain changes in the syllabi of different courses (say, emphasis on inter-disciplinary studies, the introduction of rudiments of management science and social sciences in professional courses and applied bias in the case of certain subjects like mathematics and statistics?)

The tempo and the dimension of economic growth set the limit for the absorption of scientific manpower in the last analysis. But it is the quantity and quality composition of the manpower available which decides the rate and character of economic growth and social progress. At the present moment, the main intake of scientific and technical personnel (except engineers) is in the tertiary service sectors (teaching, research, or both). The recent census reveals that "nearly 60 per cent of the degree level engineers and 70 per cent of the diploma holders are in services other than industrial or teaching."⁸

The rapidity with which the productive sectors (primary and

⁸ "Technical Manpower," *Bulletin of the Division for Scientific and Technical Personnel*, XIV (No. 6, June, 1972).

“People in Plenty”: Educated Unemployment in India

WARREN F. ILCHMAN*

The problems posed for India by an expanding population are usually discussed by demographers in terms of threats to food supply or densities thought hospitable to man. Such problems from ‘overpopulation’ may be there, but they are distant and abstract. Caloric intake has risen and people adjust to a variety of densities. A more tangible and immediate problem is scarcity of employment opportunities: Young peoples’ expectations and families’ incomes are at stake. I do not wish, however, to imply that this is a new problem in India. Macauley’s Minute, after all, was written partly to provide a solution for unemployed graduates of *madrassahs* and sanskrit schools. What is new is the problem’s apparent intractability. Between expanding populations and more food or more hospitable densities stand likely prospects of science and technology: high-yielding seeds, fertilizers, highrise construction, and reclaimed land. But what stands between expanding populations and employment opportunities is less susceptible to a ‘quick technological fix’; it requires capital painfully extracted over time and in substantial amounts from stockholders, citizens, and other regimes, and imaginatively and patiently associated with enterprise. Capital-labour ratios and projections of demand may satisfy planners, but ‘development’ may *never* provide in

*Reprinted from *Asian Survey*, 9 (October, 1969), pp. 781-795, with the permission of the author.

studies (including forecasts) on scientific manpower which decides, to a large extent, the course of educational reform and solves many a crucial puzzle in the field of economic planning itself. .

raises a different question: "What do we do with what we have too much of?" In responding to the Indian graduate unemployment situation, two analyses, both officially requested, concluded that a return to a situation where supply meets demand or to a point of scarcity of graduates was necessary¹—as if these young people could be stuffed back into their mothers' wombs. The heady experience of trying to think in intellectual categories predicated on 'plenty' and to accept an increasing university enrolment as a 'given'—a situation thought desirable in other settings and to devise ways of employing the products more effectively might be recompense enough. But whatever is found in India in relation to this problem, and whatever is done or not done about it, will be of use elsewhere, as graduate unemployment is rapidly approaching a universal status. The prospect of devising policies for a persistent and growing corps of unemployed graduates threatens not only India but most countries. Even industrially advanced nations are on the eve of widespread educated underemployment and even unemployment. This phenomenon not only frustrates youths' ambitions but socially taxes the aspirations of parents. Underemployment and unemployment may differ in their consequences for individuals, but they have many social consequences in common, especially the monopolizing of issues of social conflict in the political arena. That graduate unemployment should spill over into the political arena is not surprising, nor is it inappropriate.

By any measure except expenditure per pupil, higher education in India has expanded at a great rate. Compound interest as high as 10-13% per annum growth has been registered in enrolments, new colleges and universities, and annual total expenditure. Next to the United States, India probably has more students in universities than any other country, though the proportion of university students per 1,000 population is among the lowest. India also probably registers the highest transfer percentage of secondary-school graduates to universities. While wastage is high (although not much higher than in the U.S.), probably more

¹ Institute of Applied Manpower Research, *Nature and Dimension of Educated Unemployment in India* (New Delhi, 1965), (mimeo), p. 49; Tyrrell Burgess, Richard Layard and Pitambar Pant, *Manpower and Educational Development in India, 1961-1968* (London: Oliver and Boyd, 1968), p. 48.

India the abundance of employment opportunities necessary to keep pace with the number of young people seeking work. This is a key problem for the next several decades for anyone concerned with the use of human resources in India.

The problems of youth unemployment are not, however, beyond the touch of policies the Government of India or various states might adopt. The efficiency of these policies will depend on the type of understanding which those who are responsible have. By 'type' of understanding I do not mean 'complete' or 'incomplete' or 'true' or 'false.' I mean that the efficiency of policies depends on what division of the problem one adopts and which empirical indicators one chooses to show the dimensions and directions of change. Of all the ways of dividing the problem of youth unemployment, doing so on the basis of levels of education seems most sensible. Other ways of stratifying the population or dividing the problem, such as by region, age, sex, or skills attained, will yield different understanding and policies. But level of education correlates closely with the kinds of employment offered and the incomes aspired to in India; moreover, an analysis of a youth population so stratified takes into account the largest number of sensitive inter-relationships that policies can affect.

Therefore, out of the larger problem of youth unemployment I have chosen to treat the smaller problem of graduate unemployment, and within that category I will treat the unemployment problem of graduates in general arts, science, and commerce. Enough may have been said already about unemployed engineers and other technical graduates. The empirical indicators I use are the key growth characteristics of the supply of graduates and the key utilization facts of the demand for their services.

Three reasons especially commend examining the problem of graduate unemployment. First, the literature in economics and manpower planning has been oriented towards scarcity and the concomitant concern with providing adequate numbers of elite personnel. The central question, and a determinant of much of the technology and methodology of the disciplines, has been "how do we get more of what we want or need?" This question has been especially dominant when the issue has been the employment of educated and skilled personnel, though of course not so when the issue has been rural labour. Graduate unemployment

shall start declining from the year 1970-71 onwards.⁶

The various projections and estimates for general arts, science, and commerce enrolments seem to me to be very conservative. Even if the Steering Committee is correct and the *rate* of growth declines, there is still the likely increase of 9% per annum. If this were halved during the fifth plan, it would still entail an increase in beginning enrolments that would be roughly the same as the absolute increase of the previous plan period. In addition, other factors will be present that will contribute to growth of enrolments and probably to the growth *rate* as well. The technology of diffused and inexpensive mass higher education is being developed rapidly in India and encouraged in several quarters. Correspondence-course students will doubtless increase in number, especially as existing and even new colleges are unable to meet the demand. But correspondence courses will also be taken by many who previously would not have attended the university. Another spur to the increase in growth rate and enrolment will be the further development of night and early morning shifts in existing colleges. Second, the rate of growth of education for women will compensate for any decline in rate pertaining to men. There will also be increase in enrolment from scheduled castes and scheduled tribes and from backward communities. In addition, the progressive elimination of fees for secondary education and even (in Tamil Nadu) for pre-university will increase the growth rate of secondary education. The transfer ratio from secondary school to university will not fall, but probably rise. Although fees in Indian higher education are negligible when compared to those elsewhere in the world, fees for secondary school and college do nonetheless act as a deterrent for many. Finally, the major historical barrier for most seeking university education, a working knowledge of English, is rapidly receding as more and more colleges and universities adopt their regional language as the medium of instruction. These forces, all leading to greater access to higher education by proportionally more young people, are strengthened and reinforced by prevailing rates of unemployment of matriculates. While 'earnings forgone' may have important

⁶Steering Committee of the Planning Group on Education, *Educational Development in the Fourth Plan, 1969-74* (New Delhi: Educational Division, Planning Commission, September 1968) (mimeo), p. 95.

Indian graduates leave the university to enter the labour force than elsewhere, though again the percentage of graduates in the labour force is very small indeed. The distribution of students and graduates among the various disciplines and fields remains roughly what it was in 1948, though the absolute increases in professional and technical fields are very impressive by any national standard. Still, arts and science maintain their dominance as subjects studied, and despite regional differences arts subjects are studied by the larger number; science and medical enrolments could be many times their present size.

The projections for growth of higher education make these present attainments seem small. The estimates for 1968-69 are 1,679,000 enrolled and 218,000 graduated.² The London School of Economics-Indian Statistical Institute projections, which supposedly are "implied by manpower needs", are 3,038,000 enrolled and 377,000 graduated for 1975-76, and 6,216,000 enrolled and 772,000 graduated for 1985-86.³ These numbers relate to arts, science, and commerce subjects only! Straight line projections by the Institute of Applied Manpower Research for 1975-76 are very close to the LSE-ISI estimate; on the basis of existing trends and without reference to manpower needs, the figures are 3,157,000 enrolled and 410,000 graduated added to the total stock.⁴ In a paper submitted to the Education Commission, one economist estimated requirements of at least 50,000 new faculty members between 1971 and 1976 and 1,275 additional arts, science, and commerce colleges by 1976.⁵ The Steering Committee of the Planning Group on Education expects about a million additional general education enrolments. The only 'sunny' estimate is one by the same group that suggests that the great increases in secondary education are now over and that the transfer ratio to the universities will begin to decline:

(Because of a reduction in the 'feeder cohorts')... it is expected that the rate of growth of enrolments at higher education

²Government of India, Planning Commission, *Fourth Five-Year Plan Draft 1969-74* (New Delhi, 1969), p. 284.

³Burgess, *et al.*, *op. cit.*, p. 40.

⁴Institute of Applied Manpower Research, *op. cit.*, p. 30.

⁵A. B. Shah (ed.), *Higher Education in India* (Bombay, Lalvani, 1967), pp. 1-10. Paper is by the editor.

trued, the U.G.C.'s resources seldom used coercively, and the resources are inadequate in the first instance to be of consequence to this problem. Those with resources, on the other hand, feel differently about expansion: university registrars are anxious for more examination fees; college lecturers seek more openings in other colleges and university professorships; state politicians are pleased to associate themselves with their constituents' increasing opportunities for betterment; communal, caste, and regional associations sponsoring colleges are anxious lest their members' children be unable to compete against those of other communal, caste, and regional associations also sponsoring colleges; parents want more opportunities for their children, assuming that the consequences of rapid expansion will not strike them; and young people seek education to remain competitive in a job market with changing minimal qualifications, or because they have nothing else to do, or because they desire education for its own sake.

The motivation for expansion is there; the ease of expansion derives from a particular unit of education: the college. The affiliating and constituent college system in India has permitted the lowest per student expenditure on education probably in the world, and hence allows the establishment of new colleges with relatively little investment and low recurring costs. For example, the cost per pupil in arts, science and commerce colleges in 1963-64 was Rs 333.⁷ Although states are increasingly strapped financially, the grant-in-aid costs, when compared with other educational outlays, are small and their growth too incremental to cause great alarm. But the college contributes in other ways. Except for technical and professional subjects (and sometimes science), *laissez-faire* has been the decision system for students choosing fields of study and for colleges responding to the demand. While quotas in fields are sometimes established by universities, their deterrent effect is minimized as the universities sanction new quotas whenever the demand becomes heavy and as the movement proceeds to colleges where quotas are not yet full. Moreover, the model for universities and colleges in India is drawn from an international model that seems to require duplication of all modern forms of study in the arts, sciences, and commerce, proliferating in each college the possibilities for such choice. Inter-college

⁷Government of Maharashtra, *Educational Development in Maharashtra* (Bombay: Education Department, 1968), pp. 68-69.

theoretical implications for economists computing rates of return, they have little tangibility in the lives of young people who choose higher education over idleness. As the criterion for jobs and even marriage shifts from caste to education, the planning judgments for higher education are rendered even more inadequate.

Planning is, of course, not simply the registering of demand for higher education; it is shaping and determining the demand side in a way that meets public needs. Such a model role for planning clearly reveals how 'unplannable' higher general education is in India. When the task involves determining priorities for expanding professional and technical education, then the planners—at the state level and the centre—succeed in achieving a moderately rational expansion and, in the case of engineers, a substantial reduction in enrolments. But efforts to control the expansion of arts, science, and commerce enrolments have been completely unavailing. Every state plan in India has at an early period included a statement to the effect that educational backwardness requires that high priority be given to higher education, and at a later period a plea 'to stem the tide' or 'close the flood gates'—the metaphor being especially telling. A favourite phrase occurring in all state and centre plans for higher education is 'consolidation and improvement of existing institutions.' 'No new starts' is always recommended. Plan reviews, on the other hand, always record a greater public expenditure on higher education than 'planned' and the establishment of several universities and colleges when none was recommended.

Why is this the case? Briefly, those who are worried about the supply of graduates exceeding the demand for their services are without adequate resources or too little will to use what they have. Those who are not worried—at least not yet—are those with resources. Let me explain. Only a handful of individuals or groups—mostly persons in planning and employment organizations at the centre, some finance and education departments in the states, and some 'foreign experts'—seem to consider the control of numbers in general higher education an important priority. As education is a state subject in the Constitution of India and is largely financed, especially in nontechnical fields, by state resources and the private sector, the power of those who wish to curtail numbers is small. Moreover, the terms of reference of the University Grants Commission have been narrowly cons-

tones used in the report should be considerably amplified. Although the official rate is only 175,000 educated unemployed in 1968-69, it is my guess that the figure is almost twice that.

Compared with matriculate unemployment, such a figure is small, especially when it is further converted into a percentage of the work force. As often happens, the magnitude of India's total population dwarfs a problem and obscures its importance. If total population is the basis for action, then Indian policy-makers should proceed to expand higher education. If the percentage of educated unemployed is compared with the total unemployed, then the former figure can be dismissed as relatively insignificant. It is my hunch, however, that no nation in the world has ever experienced such widespread and extended unemployment among graduates. Moreover, these unemployed have greater potential political and economic significance owing to their concentration in certain areas, their readiness to be mobilized for politics, and their relevance to certain economic choices the government may wish to make. Even the apparent advantage of graduates over matriculates bears scrutiny. When better measures are found, it is likely that graduate unemployment compared to the last two cohorts of graduates will be higher than matriculate unemployment compared to the last two cohorts of matriculates. The implication of this is not that matriculates do better in job markets; rather, it reveals that a large percentage of new matriculates become university students, so that their potential unemployment is reduced under the matriculate status.

What is known about the utilization of graduates? Very little. In the 1950s and early 1960s there were a few university studies, the findings of the Directorate General for Employment and Training surveys, the National Sample Survey, and the 1961 Census.¹⁰ While the information found in these investigations is useful for comparative purposes, only one source exists which explicitly treats the issue of 'utilization' and not simply the employment status of graduates. In preparing the Fourth Plan, each state government was encouraged to undertake a study of the graduates of its universities and their utilization after they

¹⁰For example, Government of India, *Report on the Pattern of Graduate Employment* (Ministry of Labour and Employment, Directorate General of Employment and Training, New Delhi, 1968).

jealousies also force each college to expand its offering to include the latest variety. Finally, the movement of higher education into the countryside and its penetration into lower income groups through caste-and-communally-run colleges mean that in almost every university considerable excess capacity exists. Another common pattern for expansion has been for universities to increase the number of students and colleges to the point where they divide into two universities, and then for each to expand to a size approximating that of the parent body at the time of its fission.

The prospect of this rapidly increasing graduate population frightens many, and while it would be easier for them if the output of universities equalled the demand for the services of graduates, the situation is far beyond the point where curtailing university education is possible. With that as a 'given' or as highly probable, what can we learn from the utilization of graduates that might be of use to those concerned with a large corps of educated unemployed as a continuous problem for public action?

In the best of circumstances, unemployment is always difficult to define and measure for the analyst, though seldom for the unemployed. The efforts of the Dantwala Committee should improve definitions and subsequent measurements of unemployment and underemployment. But the committee's impact on the collection and reporting of social data is still far off. As some figure is necessary for our purposes, it might be useful to take as a conservative estimate the judgment of the Institute of Applied Manpower Research in its study of unemployment among the educated:

It is revealing that the number of workless educated persons in 1975-76 would not be far short of the total stock of educated persons in 1960-61.⁸

That estimate was 891,000 graduates and higher. The LSE-ISI report also acknowledges the likelihood of substantial unemployment for general arts, science, and commerce graduates.⁹ As the estimate for that report was based on a higher growth rate of industries, a proportional curtailment of enrolments in and a lengthening of arts, science, and commerce courses, and an emphasis on professional and technical education, the muffled

⁸Institute of Applied Manpower Research, *op. cit.*, p. 46.

⁹Burgess, *et al.*, *op. cit.*, p. 40.

degrees may disguise those who would otherwise contribute to the unemployment percentage.

(f) The chief employer remains the state government.

(g) The largest percentage of graduates are employed in clerical and administrative posts in the public sector. The second largest percentage is in teaching.

(h) Only a fraction of a percentage of graduates are self-employed.

(i) The second job for first-job, private sector employees is in the public sector; there is virtually no reverse movement.

(j) There is an increasing participation by women in the work force.

(k) Earnings do not improve with most types of further general education, except for the Ph.D.

Two questions emerge. First, to what extent do the quality and kind of education contribute to graduate unemployment? The answer requires more observation, thought, and research than I am capable of doing at this time. Nevertheless, some answer should be attempted. There is much talk in India about the irrelevance of higher education for India's development. Such a proposition is both true and false. On the one hand, it is quite correct to say that for the skills necessary in the work most graduates do, the university is irrelevant except as an elite-identifying mechanism. But then of course that is true of the situation in most nations and their university systems. On the other hand, if it is argued that studying other subjects than arts, science, and commerce—especially more advanced scientific and technical subjects—would better fit persons for jobs needed for India's development, then the proposition is false. It is a latter-day version of the "vocational fallacy," which argued that agricultural education would ensure that sons of agriculturists would remain on the farm.¹² What is found, of course, is that students seek whatever education makes them eligible for the opportunities that exist. In the Indian version of the vocational fallacy, it is argued that a more relevant education would lead graduates to development opportunities; instead, the graduates act like their pre-

¹² Philip J. Foster, "The Vocational School Fallacy in Development Planning," in C. Arnold Anderson and Mary Jean Bowman, *Education and Economic Development* (Chicago: Aldine, 1966), pp. 142-66.

received their degrees.¹¹ The limitations of the studies are clear: the participation rate varied considerably; they do not easily account for transfers from one state to another; only six states have so far completed them. On the other hand, the studies are comparative since more or less the same questionnaire was used for each; they provide comparisons within each state for as many as three cohorts of graduates, and they are reflective of the recent economic situation. Several propositions emerge from these studies and from their comparison with earlier ones. Relative to our concerns, the following are the most important:

(a) An increasing percentage of graduates are unemployed.

(b) It is taking longer, on the average, to secure a job after the degree. The first job is increasingly temporary.

(c) Unemployment is experienced worst and longest by graduates in commerce, then in arts, and then in science. But the differences between degrees in this regard are diminishing.

(d) The employability of first division graduates remains high in terms of the imputed status of the posts achieved and their average salary, not in the length of time it takes to secure first jobs. But there are no marked differences between second and third division graduates for status of jobs, incomes, and waiting periods for first positions.

(e) The high percentage of students pursuing post graduate

¹¹ See: Government of Andhra Pradesh, *Utilisation Pattern of Educated Persons in Andhra Pradesh* (Hyderabad: Planning Department, 1968); Government of Gujarat, *Study of Utilisation Pattern of Educated Persons* (Ahmedabad: Bureau of Economics and Statistics, 1967); Government of Haryana, *Study of Utilisation Pattern of Educated Persons in Punjab* (Bureau of Economics and Statistics, Chandigarh, 1968); Government of Madhya Pradesh, *A Survey of Utilisation Pattern of Educated Persons in Madhya Pradesh* (Bhopal, Directorate of Economics and Statistics, 1968) (mimeo); Government of Kerala, *Sample Survey on Employment and Unemployment* (Trivandrum: Bureau of Economics and Statistics, 1966) (mimeo); Government of Maharashtra, *Utilisation of Educated Persons* (Bombay: Manpower Wing, Planning Division, Finance Department, 1966); Government of Madras, *Short-Term Study of the Utilisation Pattern of Educated Persons Produced During the Third Plan Period in Madras State* (Madras: Department of Employment and Training 1968); and Government of Mysore, *Utilisation Pattern of Educated Persons* (Bangalore: Planning and Social Welfare Department, Director of Evaluation and Manpower, 1969).

independence predecessors and seek government employment. The fact remains that development jobs do not exist in any quantity yet, and the employment that does exist is public sector employment not unlike that undertaken by their forebearers. No occupations with employee shortages ever include anything like the number of positions the argument envisions. When opportunities exist for jobs for which the "more relevant" higher education is appropriate, Indians by the thousands will pursue that education. Until then, arts, science, and commerce education is adequate for the sorts of jobs available. And since many graduates become teachers in secondary schools and colleges, it is probably the appropriate education as well.

The amount and duration of unemployment among graduates are both increasing. Forces that might have once acted to reduce the supply of graduates to approximate the demand for their services no longer have influence. To what extent have India's development plans improved the demand side of the picture? While the question should be asked, the answer is hard to find. The backlog of unemployment has grown during each plan period. It is customary to admit in plan documents that the forthcoming additions to the labour force might not even be accommodated, let alone the backlog. The present plan document wisely avoids such speculation, for speculation is all it is. The fourth plan simply states: "No attempt is made in this document to present data on the lines followed in previous Plans."¹³

Almost nothing worth reporting is known about the employment potential of plans. Estimates for most direct and all indirect employment associated with plan projects, apart from labour-intensive works projects and a few other schemes, have eluded manpower "forecasters"—although it is customary to claim all new jobs in a five-year plan period as the plan's creation. This has, among other things, contributed to the misleading procedure of relating investment levels of plans to employment creation. It is especially misleading in India, where many factors of education, sector, region, ownership, and caste affect the aggregate employment. The employment potential of plans for any generally educated persons should be considered equally unreliable. Even if the technology existed to estimate needs for such graduates

¹³ *Fourth Five-Year Plan Draft*, p. 20.

students to this sort of labour is much exaggerated (as is the willingness of American students to undertake it) and the returns on the Bangalore scheme not yet in, this type of programme in the context of widespread unemployment might well reduce the reluctance of graduates to look for self-employment. Adequately financed at the outset, this scheme should be extended to all University Employment, Information and Guidance Bureaux.

The second scheme is currently only at the talking stage, though this stage appears to have been reached some time ago. As it emerges organizationally, it would be a state-based corps of educated unemployed who could be used to run programmes on at least a two-year service basis in rural *and* urban areas in community development, literacy and other educational programmes, public health, family planning, and youth recreation. As unemployment strikes first-division as well as third-division and pass-degree graduates, science as well as arts and commerce graduates, the corps can be representative of the entire student population and not simply the dump heap for the poorly educated and irrelevant. There should also be a comparable distribution of leadership skills such as would appear in any student body. The number for each state would depend on the size of its unemployed population, the positions which could be usefully created, and the resources that could be mustered for the purpose. Perhaps a target of 25 to 50% of the unemployed might be possible in several states, and the centre, too, might absorb a number in similar fashion. As each participant would receive a small salary (and possibly an equal amount deposited in his or her name at a bank for withdrawal on completion of the programme), the costs would pose a problem. But these could be met in part by savings from the diminished cost of postgraduate education (brought about by the possibility of post-degree employment and the consequent lower enrolments), the reduced costs of coercion required to cope with student-indiscipline and para-political activity in the streets, and the income-producing and income-saving results of the useful work the participants would be doing. Foreign governments, especially those with experience in this field (e.g., Israel, the United States, and the Soviet Union) might be persuaded to contribute resources to various corps. When cost-benefit comparisons are run and education and service projects lag behind other investment opportunities, however, it should be remembered that the poten-

will remain the major source of new employment for graduates of arts, science, and commerce. Self-employment, although called for in the plan, is virtually unsupported centrally or at the state level.

Thus, the Government of India is confronted with a situation in which the numbers of young people finishing degrees and seeking employment far exceed the potential of the economy to provide them with jobs. It is likely that this situation will persist for a long time and may well become a permanent feature of Indian society. Contrary to the optimism generated by the two decades of talk about development, the favourable outcome of this problem is far from certain. In the past, governments have had to recognize the persistence of similar problems and devise policies to ameliorate at least their worst aspects. The Government of India and the state governments must do likewise. It will no longer do to postpone policies because of the "promise of development" or to assume that the responsibility for unemployment must be borne by the young person and his family. The provision of University Employment, Information, and Guidance Bureaux can only qualify as a gesture in this direction.

There are programmes that can make a difference in the overall picture of unemployment among educated persons, but none can eliminate it or even reduce it to small proportions. Two schemes are, I think, especially commendable. One of them would try to induce graduates in arts, science and commerce to seek self-employment. Nowhere, do large percentages of university graduates seek self-employment; there seems to be a universal socialization at the university for graduates to join the ranks of the salaried. A small attempt to reverse this for India has been started at the University of Bangalore. There the University Employment, Information, and Guidance Bureau offers to several hundred students an opportunity to find employment while they are studying. In commercial shops during peak customer hours, at a cooperative book-bindery for university and college libraries, in individually produced consumer goods establishments, at a state-owned soapfactory, students earn as much as fifty rupees a month. The merits of the scheme, which is largely self-financing, should be obvious: it inculcates in the participants a sense of personal effectiveness; it provides a work experience in the world of small and 'ad hoc' business; and it fosters in students an appreciation of the small economic opportunities existing around them. While the aversion of Indian

fields is important for planning, then flexible tools must be developed to affect the will and ability of young people and their parents to choose university attendance and fields within the university. Such tools might include:

Pre-university levels:

(1) Raise or lower minimum graduation requirements for specific fields or for students generally.

(2) Lengthen or shorten the time required for specific fields or for students generally.

(3) Raise or lower secondary-school fees for specific fields or for students generally.

University level:

(1) Raise or lower entrance requirements for specific fields for students generally.

(2) Raise or lower fees for specific fields or for students generally.

(3) Lengthen or shorten residence and time requirements for specific fields or for students generally.

(4) Raise or lower graduation requirements for specific fields or for students generally.

(5) Limit the numbers for specific fields or of students generally.

Post-university level:

(1) Curtail or expand (prohibit or allow) public employment for graduates in specific fields or for students generally.

(2) Require or exempt from national service graduates of specific fields or graduates generally.

(3) Increase or lower salary minimums and maximums for graduates in specific fields or for graduates generally.

The Government of India and the governments of various states have not developed these tools. Those they have stumbled on by chance remain unanalyzed in terms of their potentiality for affecting numbers or courses pursued.

Fourth, when schemes are devised they must be adequately financed and their personnel given sufficient authority to succeed. Too often schemes that are well formulated and intentioned have

tially more productive investment is *not* always made and may not be realizable within the existing time horizon of the comparison.

On a less tangible level, some estimates of costs and benefits of such a scheme should be made. The benefits of the programme should be obvious:

(a) the energies of youth would be employed fruitfully and the extreme cynicism of unemployment avoided; (b) it would accustom young people to community service and to living in otherwise undesirable locales; (c) it would increase youths' knowledge of available local opportunities for employment; (d) the government would have another chance to improve students' skills; and (e) employers would be provided with employees with more maturity, experience, and personal skills. The costs, too, should be obvious. In an economy which already rewards education disproportionately with high salaries, the possible scarcity created by a corps might tend to keep wages from falling or for certain kinds of labour from driving wages upward. Politically, one can easily imagine such a corps being misused to serve certain political ends (though, conversely, one can also imagine the corps being used to advance valuable political ends). In addition, the problem of choosing a smaller corps from a large number of equally eligible unemployed might be politically explosive. So might be the demand of former corps participants to be given preferential treatment for government employment. But the long-term costs of unemployment among the educated are higher and, to my knowledge, there are no benefits.

If it is true that the problem of unemployment among the educated is around the corner for many countries, rich and poor alike, what lessons are there to be learned from the Indian experience? First, manpower planners should not confine their attention to the production of scarce skills only, but should also be concerned with planning for 'surplus' skills as well. An analogy to medicine might be appropriate here: in the past, manpower planners have been interested mostly in 'preventive' medicine; now they should be interested also in the 'curative' side. Second, there must be a point in government decision-making where education and manpower concerns can be brought together and *reconciled*. In India there is no such point, though several committees and bodies exist to serve that function. Third, if the numbers attending universities and their distribution across

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withered for lack of resources and authority over them. The University Employment, Information and Guidance Bureaux are a case in point. Fifth, if a nation wishes to control the expansion of higher education, the unit of expansion must be big enough and costly enough to ensure sober consideration. The constituent and affiliating colleges in India are too small and inexpensive to induce such reflection. Finally, and perhaps most important, there must be policies for what you have in abundance as much as for what you lack and want. Responsibility for ignoring the problem of unemployment among the educated can be laid at the door of a dozen 'development-minded' departments and ministries in India too busy with 'tomorrow' and with too little time for 'today'.

The Education Commission worked in the context of the situation I have just described. As is clear from other pieces in this commentary, the manpower aspect was too little in evidence in the Report, both in the analysis and in the recommendations. The supplementary minute by Gopalaswami was too abstract and too late to be of consequence.¹⁶ The results of the London School of Economics-Indian Statistical Institute projections, given the assumptions made about economic growth, were positively misleading. Even so, the contradictory objectives of any endeavour like an educational assessment are bound to result in inconsistent recommendations. Excellence and social justice are difficult to reconcile as goals; economic productivity and national integration often lead in opposite directions as criteria for reform. On these dilemmas, the Education Commission impaled itself: ensuring jobs for all graduates, controlling the numbers in universities to ensure excellence, expanding the opportunities for higher education for backward communities, etc. It is not surprising, then, that what began as a commentary to celebrate this Report may well serve as its obituary.

¹⁶ R. Gopalaswami, "Minute of Supplementation," in Government of India, *Report of the Education Commission, 1964-66* (New Delhi: Ministry of Education, 1967), pp. 517-58.

Student Politics: Historical Perspective and the Changing Scene*

PHILIP G. ALTBACH

For over a century, student unrest has been one of India's most serious educational and political problems.¹ Student agitation has caused state governments to fall and has forced the central government to revise its language policies. Academic institutions on all levels have been disrupted and occasionally closed because of student activism. It is the purpose of this chapter to place the Indian student movement in its historical context, and to focus some attention on current issues relating to student activism. It is only through careful analysis that the roots of student unrest can be discerned and their causes constructively dealt with.

I

In any consideration of Indian student politics, the social and educational context of the student movement must be considered.

*This article is a revised version of a paper which appeared in S. M. Lipset and P. G. Altbach, eds., *Students in Revolt*, (Boston: Beacon Press, 1970). The article is basically historical in nature, although some effort has been made to analyze current trends at the end. Some of the material is now somewhat out of date, although the basic elements of student unrest and activism in India remain unchanged.

¹ The issue of student activism in India is dealt with in more detail in Philip G. Altbach, ed., *Turmoil and Transition*, (Bombay: Lalvani Publishing House, 1968). See also Aileen Ross, *Student Unrest in India* (Montreal: McGill-Queens University Press, 1969).

many, also creates tensions.⁴

The Indian university has become an important political institution, and the politicization of higher education has had an impact on the student community.⁵ Academic politics in many institutions involve students, thus contributing directly to an increase in activism.⁶ In other parts of the country, local, state, or national political issues impinge on the campus. The language agitations in Tamilnadu in 1965 and student involvement in the various election campaigns in 1968 and 1971 testify to the impact of political events on the campus.

The fact that the Indian student movement like similar movements in other developing countries, is very much effected by its broader political context makes the future of the movement especially difficult to predict.⁷ For example, should political instability grip the country or even a part of one region a student movement with tactical sophistication could emerge and play a major role despite the absence of such movements at the present time. At present only West Bengal can claim an ideologically sophisticated and active student movement. However, other movements have arisen in India, such as during the government crisis in Orissa in 1965 and in Tamilnadu on several occasions in recent years, thus indicating that there is a very strong potential for student movements to arise when conditions for them are favourable. Much of India's "student indiscipline" is of a sporadic and unorganized nature, reflecting

⁴ The fact that students regularly hold demonstrations in examination hall and examinations are often disrupted is ample testimony to the seriousness of this question. The papers prepared for a recent conference on examination reform, sponsored by the Inter University Board and held in Delhi in January, 1971, provided data on this problem.

⁵ See Amar Kumar Singh, "Academic Politics and Student Unrest; The Case of Ranchi University," in P. G. Altbach, ed., *op. cit.*, pp. 204-240. See also P. G. Altbach, *The University of Bombay: An Academic Institution in a Transitional Society*, (Bombay: Sindhu Publications, 1972).

⁶ The official government reports on Banaras Hindu University, Aligarh Muslim University, and Allahabad University provide detailed and dramatic testimony to the importance of faculty politics.

⁷ See Philip G. Altbach, "Student Politics in Developing Countries," *Education Quarterly*, 21 (July, 1969), pp. 37-39.

Perhaps especially in modern India, where there have been few continuing politically-oriented student movements since Independence, the context of student activism is important. Most of the chapters in this volume bear on various aspects of the "student problem," and it is beyond the scope of this essay to deal in detail with all aspects relating to student activism. However, it is important at least to mention some of the more important elements of Indian social and educational life which bear on student activism.

The Indian student does not function in a vacuum, and he is very much a part of his society and subject to the pressures which are evident in Indian society. India, despite recent impressive gains, is still very much a "society of scarcity."² University students must worry about suitable employment after graduation and about the conditions of study while in college. It is hardly necessary to reiterate the fact that many Indian university graduates must wait for long periods before finding employment, and many never obtain jobs which are satisfying to them. Furthermore, the conditions of many students are substandard, and more than a few college and university students do not even have the minimum standard of living necessary for study.³

The educational system itself effects the lives of students very directly and has a major impact on the nature and form of student activism. In the pre-Independence period, the elitism, prestige and limited size of the academic community effected the nature of the student movement. Similarly, modern Indian higher education also effects the student movement. The tremendous growth of the academic system since 1947 and the resulting loss of status for the individual student has had an impact. Serious overcrowding and pervasive bureaucracy in higher education also makes a difference. The language issue, discussed in detail elsewhere in this volume, seriously effects the individual student. The very high 'wastage' rate in Indian higher education means that a large proportion of the student community never obtains a degree, and this naturally places strains on the individual student. The examination system, described as outmoded and irrelevant by

² This notion is discussed in detail in Myron Weiner, *The Politics of Scarcity*, (Chicago: University of Chicago Press, 1962).

³ Ministry of Education, *Survey of Living Conditions of University Students*, New Delhi: Government of India Press, 1962).

ress appealed to the students because it provided the opportunity for dramatic political action and promised speedy independence for India. The Congress leadership was based in the college-trained intelligentsia, but the influence of radical thought on the growing working class gave it added strength.

Gandhi's non-cooperation movement of 1920 was the first major mass agitation initiated by the Congress. It was also the first political struggle that involved large numbers of students. Youth leagues were formed in major educational centres to coordinate student efforts, and the discussion and debating societies of earlier periods became the nuclei of political organizations.⁹ Students helped with Congress campaigns and provided much of the manpower for the almost daily street demonstrations in the cities. In some areas, students assumed the movement's leadership when Congress leaders were arrested. National (anti-British) colleges were established in major cities, but they were only temporarily successful, for many students returned to their regular classes when the heat of the movement abated. Although the non-cooperation movement failed to expel the British from India, it did establish the Congress as a militant mass organization and gave the students and the growing trade union movement their first experience of mass political struggle.

The non-cooperation movement stimulated the foundation of a national student federation in India. The first annual All-India College Student Conference was held in Nagpur in 1920 to provide coordination for the growing student political movement. Similar student movements took place throughout the 1920's, and these annual gatherings helped to keep the political spark of the student movement alive in a period of general political quiet.

Regional student federations were founded in the Punjab, in Bengal, and in other areas. The All-Bengal Students' Association claimed a membership of twenty thousand in 1929. The Bombay Presidency (provincial) Students' Federation, formed in 1936, helped to bring ideological politics to the local and provincial levels. The All-India Student Conferences, which normally attracted more than three thousand students from all parts of the subcontinent, provided left-wing Congressmen with a platform and with support for their views. These conferences were charac-

⁹ Prabodh Chandra, *The Student Movement in India*, (Lahore: All-India Students Federation, 1938).

the reactions of students to their conditions and to the society at large.

II

In order to obtain a complete understanding of the student movement in India, it is necessary to discuss the history of Indian student movement. Several student organizations had been founded by 1900, although educational and social matters and not politics were their main preoccupations. Only a relatively small minority, perhaps numbering a few thousand throughout the country, took any interest in politics and most of them were engaged in moderate discussion groups. This situation reflects the small enrolments of the Indian universities at the time (23,000 students in 1900), and the generally elitist orientation of the student community. As one observer noted: "It was not till after the political and racial excitement (of the nationalist movement) that the youth attending the schools and colleges showed signs of turbulence and insubordination."⁸

The period prior to 1920 was a time of establishing higher education in India and a slow development of political consciousness among students. While the militant activism of later decades was missing, students were exposed to ideological currents from Europe, and the growing political tensions within India added to this ferment.

The 1920's brought both educational and political changes to India. Continued growth in the educational system created increasing problems for the students. The establishment of new colleges, many without stable financial arrangements or adequate staff, lowered the standards of higher education and intensified the competition for jobs. Politically, the twenties saw the growth of the Indian National Congress as a mass movement under Gandhi's leadership. During its early years, the Congress was a moderate organization recruited primarily from the Western-educated middle class and not given to political agitation. As the Congress grew more militant in the early years of the twentieth century, the student community also took a more active interest in politics. The articulate and militant nationalism of the Cong-

⁸ Dinkar Sakrikar, "A History of the Student Movement in India," (Unpublished manuscript, 1946), p. 33.

In addition to the "mainstream" nationalist student movement, a number of other important trends existed within the student community. Many Muslim students, previously apathetic or pro-Congress, were influenced by Mohammad Ali Jinnah's call for a separate Muslim state on the Indian subcontinent and joined the Muslim League's All India Muslim Students' Federation, founded in 1937. This organization, which had substantial support among Muslim students, did not participate in the independence movement, but pressed instead for Muslim rights. While the importance of the Muslim student groups diminished after the formation of Pakistan, the Muslim student movement helped to shape the political ideologies of a whole generation of Muslim leaders.

The Hindu right wing also gained strength, in part as a reaction to Muslim separatist sentiment. The *Rashtriya Swayamsevak Sangh* (RSS), founded in the late 1920's, appealed to militant Hindu nationalism, and to anti-Muslim and anti-Christian feelings among Hindus.¹² By upholding traditional Hindu values, then under attack from Westernized elements in India, the RSS was able to attract many students, particularly in smaller colleges. The Hindu Student Federation, founded in the 1930's and similar in ideology to the RSS, had a more sophisticated approach and greater appeal for college students. Its influence was limited to north India, however, and it never constituted a threat to the nationalist student movement.

The civil disobedience movement of 1930 ushered in the most active period of political agitation undertaken by Indian students. By 1938, Indian colleges were highly politicized, and students were involved in a variety of protest activities. Strikes against college authorities occurred almost weekly in many parts of India, instigated as often to further nationalist purposes as to correct a particular educational grievance. Students not normally concerned with political issues were attracted to the dramatic nationalist struggle. Thousands served short jail sentences for their part in the struggle, and many left college to work in the nationalist and labour movements or the Gandhian educational and social-service projects.

¹² For a study of the Hindu nationalist movement, see Joseph Curran, *Militant Hinduism in Indian Politics: The Case of the RSS*, (New York: Institute of Pacific Affairs, 1951).

terized by militant nationalism, and the ideas of socialism and Marxism found support among the students.¹⁰ The student movement was probably the most radical element in Indian political life during this period. The study groups organized by left-wing students brought to the Indian campus the ideologies of European Marxism and the Russian Revolution—both of which had a marked influence on the thinking of politically minded students. While only a minority of the student community was politically active in the 1920's, the movement established itself during this period and gained both organizational experience and ideological sophistication.

The 1930's brought an intensification of the political struggle in India. The influence of radical nationalist and socialist ideas spread by left-wing leaders, both in the Congress and in the student movement, prepared the students for more active phase of the nationalist struggle. Gandhi's civil disobedience movement of 1930 involved students on an unprecedented scale, and many of the more militant activities, such as the boycotting of shops and the cutting of telephone lines, were carried out by students. The Gandhian concept of nonviolence was never fully taken up by the students, some of whom participated in terrorist activities.

One of the results of the agitation of the early 1930's was the creation of the All-India Students' Federation in 1936. From the beginning, the AISF was strongly nationalist and radical in its approach. Within two years, the new organization was able to claim one thousand affiliated organizations and fifty thousand members.¹¹ The AISF journal, *Students' Federation*, was circulated throughout India and provided a radical viewpoint on both education and national issues. The AISF effectively united the student movement for several years while Gandhians, socialists, and Communists worked harmoniously within the organization. Provincial student federations carried on the regional work of the AISF, and the annual meetings of the organization usually attracted more than three thousand delegates, as well as many of the top Congress leaders.

¹⁰ M. Muni Reddy, *The Students Movement in India*, (Lucknow: K. S. R. Acharya, 1947), p. 30.

¹¹ Myron Weiner, *op. cit.*, p. 163.

being the highly politicized character of Indian cities and towns during the 1930's and 1940's. Many members of the student generation were attracted to the movement in these urban centres. The pre-independence student community, being small and compact, was relatively easy to organize. Because young people from rural areas and from the lower castes and classes were virtually excluded from the secondary and higher educational systems, the large majority of the students came from upper-middle—or upper-class and caste backgrounds.

The emphasis in the universities at this time was on the liberal arts, and students in this area have traditionally been more concerned with intellectual and political issues.¹⁴ As in the post-independence period, students in the liberal arts were most active in political affairs during the nationalist struggle. Law students, who were destined for an independent professional career and had little chance for a government post, were particularly active.

III

By 1947, the student movement had lost much of its momentum. The Students' Congress and other major student organizations were unsuccessful in shifting their efforts from an emphasis on political struggle to a programme of Gandhian constructive service. Many radical student leaders were disillusioned by the compromises that the Congress leadership made in order to achieve independence without further bloodshed. The 1946 mutiny of the Indian Navy was an additional shock to the student movement, for the Congress leadership ordered the militant sailors to surrender to the British in the interest of a political compromise. Radical student leaders felt that they had been betrayed by the nationalist movement, and many left the student movement.¹⁵

¹⁴ For a discussion of academic discipline and student political involvement see G. A. D. Soares, "The Active Few: Student Ideology and Participation in Developing Countries," in P. G. Altbach, ed., *The Student Revolution*, (Bombay: Lalvani, 1970), pp. 72-98. See also Metta Spencer, "Professional, Scientific, and Intellectual Students in India," in S. M. Lipset, ed., *Student Politics*, (New York: Basic Books, 1967), pp. 357-371.

¹⁵ Philip G. Altbach, "The Bombay Naval Mutiny," *Opinion*, 6 (August 31, 1965), p. 35. See also B. C. Dutt, *Revolt of the Innocents* (Bombay: Sindhu Publications, 1971).

The split within the All-India Students' Federation in 1940 indicated some of the problems of the growing ideological sophistication of the student movement. After a period of harmony, differences between the Communists, on one side, and the socialists and the Gandhians, on the other, came into the open in 1940, making the breakup of the organization inevitable. The Communist-dominated All-India Students' Federation lost a large part of its support when the Communist Party supported the British war effort after the Soviet Union entered World War II in 1940. The nationalists organized the All-India Students' Congress in 1945. This group continued the struggle against the British, but at the same time it opposed the Communists. The Students' Congress, which stressed both social revolution and patriotism, was by far the most important national student organization in India at this time.

The most militant and highly organized period of the Indian student movement came during the 1942 "Quit India" struggle. When the Congress leadership called for an all-out, although non-violent, effort to drive the British from India, the student movement succeeded in closing most of India's colleges for extended periods and brought masses of students into the struggle. About 10 per cent of the student population of India (or fifteen thousand students) was involved in the day-to-day organizational work of the nationalist movement. Students not previously involved in politics participated in almost daily demonstrations. Student cadres took part in sabotage campaigns and tried, with some success, to disrupt the British administration.¹³ When the adult Congress leadership was arrested, students often assumed leadership responsibilities and provided a key liaison between the underground leaders and the movement. Student groups published illegal newspapers and even operated a clandestine radio station. Although the 1942 effort failed to expel the British from India, it was the first time that the Indian nationalists became a kind of "national liberation movement." The militancy of the students' involvement in the 1942 movement was retained, although on a reduced scale, until the end of the independence struggle.

The growth of a militant student movement in the pre-1947 period can be attributed to a number of factors—the main one

¹³ Darbara Singh, *The Indian Struggle, 1942*, (Lahore: Hero Publications, 1946), p. 278.

enrolled in about 2,750 colleges.¹⁶ The traditional base of Indian higher education, the liberal-arts college, was also waning in prestige and importance because the standards of instruction at these colleges declined seriously, as the student population expanded at an unprecedented rate. The value of science education, on the other hand, increased substantially, as India's industrial production rose, and the standards of admission into the scientific fields tightened in order to protect standards of instruction. Technological institutions were created and given sufficient financial resources, while the liberal-arts colleges were allowed to expand almost without limit and were not adequately financed. As the number of graduates of the liberal arts exceeded the number of jobs available, educated unemployment became an increasing problem, and holders of B.A. degrees could consider themselves fortunate in finding clerical employment. Many employers began to demand a college degree for positions previously filled by literate, but academically unqualified, individuals.

As the educational system grew, higher education became available to broader segments of the population, thereby destroying the homogeneity of the student population. Members of the student community had little in common since students were drawn from diverse class and caste backgrounds. Students from the lower-middle—and working-class families were often unwilling to risk their college careers to participate in political activity, and, in any case, they lacked a tradition of political activism.

A kind of "dual culture" has evolved on the campus as a result of the changes in higher education. Students from lower castes and classes often constitute a rather isolated, although growing, segment of the college population and seldom take part in extra-curricular activities. Such students suffer most from the disadvantages of Indian higher education—poor conditions and falling standards of instruction, crowded institutions and fear of unemployment—and enjoy few of its advantages. Thus, they are frustrated and willing to participate in sporadic and disorganized student unrest and demonstrations. Working-class students or those from rural areas have generally gone into liberal arts subjects, while upper and middle-class students, who have received adequate secondary training and who have facility in English,

¹⁶ Barbara Burn, *et al.*, *Higher Education in Nine Countries*, (New York: Mc-Graw Hill, 1971), p. 319.

With a few isolated exceptions, the student movement in India has been unable to regain its sense of militant unity and ideological purpose. Students have not ceased to participate in politics, but there has been a dramatic transformation of their movement. The nationalist fervour of the pre-independence period has been replaced by generally unorganized and sporadic agitation usually aimed at specific grievances.

The most important cause for the transformation of the student movement was the end of the independence struggle. Prior to 1947, political issues were clear and dramatic—the British had to be driven from the subcontinent, and radical social change had to be instituted in Indian society. The caste system, communal animosities, food shortages, and other social ills would be eliminated when India achieved independence and could guide her own affairs. Respected nationalist leaders encouraged students to take an active role in the political struggle. Following independence, the issues were no longer so clear. The Congress leadership was divided on how best to deal with India's many social and economic problems, and the departure of the British solved very little. Conservative elements in the nationalist movement achieved substantial power after 1947, and many radicals were forced into the opposition. Moreover, following independence, the Congress leaders reversed their former position and urged students to stay out of politics.

The spirit of individual self-sacrifice that had marked the independence struggle almost disappeared, and many political leaders became more concerned with their own careers than with ideology or national development. Regional, linguistic, and caste loyalties, temporarily put aside for the nationalist cause, resumed their old hold. For the post-independence student leader, a political career still depended on dedication to the Congress cause, as had been the case before 1947, but it also involved such undramatic details as winning elections and placating various economic and ideological tendencies.

Indian higher education was also undergoing changes. The expansion in enrolments, begun in earnest during the mid-1930's, continued after independence at an accelerated rate. Between 1950 and 1960, the number of college students increased from 263,000 to 645,000. In 1967, more than 2,000,000 students were

tions against an opposition political group within or outside the university.¹⁸ Communists, socialists, and factions within the Congress Party have not hesitated to use student unions for their own purposes, all the while formally decrying political interference on the campus. As general rule, however, student unions have not been involved in politics and have been limited to their social and educational functions.

It is useful to distinguish between the kinds of student leadership found in Indian universities. The "respectable" nonpolitical cultural and social student organizations are led by students from upper-class families for the most part, and these students can be called the "academic" leadership of the Indian student community. Students active in direct-action campaigns have come more frequently from the lower social classes. This leadership constitutes a relatively new and dynamic force on the Indian campus. Students from social groups without a long tradition of education, often from illiterate families, have frequently led strikes and demonstrations. The continuing leadership of leftist student groups, however, is generally drawn from middle-class students, who have a political tradition and sufficient free time to devote to political matters. This dichotomy in student leadership is a peculiar characteristic in Indian student life.

Despite the changes in student political activity, a number of national student organizations have retained some influence. After the largest of the pre-independence student movements, the Students' Congress, was disbanded in 1948, Congress leaders expressed interest in the formation of a nonpolitical student organization, and the socialists agreed to unite with them in the formation of the National Union of Students (NUS) in 1950. The NUS proved unable to rid itself of the heritage of outside political manipulation and soon foundered, never becoming the representative nonpolitical student organization that its founders had envisaged. Inadequate financing, student apathy, and the difficulty of communication in a rapidly expanding educational system proved to be insurmountable obstacles. Factional dis-

¹⁸ For a description of the role of student unions in university politics, see Joseph DiBona, *Change and Conflict in the Indian University*, (Bombay: Lalvani, 1971). See also Ministry of Education, *Report of the Inquiry Commission on Banaras Hindu University*, (New Delhi: Ministry of Education, 1969).

have tended to go into the sciences, when they have been able to meet the rigorous admissions requirements.

The fact that the most able and qualified students have gone into the natural sciences and technical fields has had important implications for Indian higher education and for student political involvement. Students in the natural sciences have traditionally been less concerned with politics and more professionally oriented than liberal arts students, and recent shifts have meant that many of the best students are no longer interested in political affairs.¹⁷ Students in the sciences often do not have time for political activity, since their academic programmes are both time-consuming and demanding. These changing conditions have reduced the numbers of students available for continuing political activity and have lowered the quality of student leadership.

IV

The transformation of the political student movement in India has altered campus life. The Indian campus probably has as many student groups and organizations today as at any time in its history, but the nature of these groups has changed with the decline of ideological politics. Student unions are, perhaps, the most ubiquitous organizations in Indian universities, and their functions often include responsibility for cultural and social programmes. While the unions are intended to provide a link between administrator and student, in many cases their functioning is less than democratic, due, in part, to administrative regulations. In most colleges, union representatives are elected by the students, although seldom on the basis of political views.

Student unions in a number of colleges have taken on political importance. In some of the more volatile of the north Indian universities, such as Aligarh and Banaras, student unions have spearheaded protest campaigns. Agitations undertaken by student unions usually stem from local issues, such as university examination policies, increases in college fees, living conditions, and the like, but in some cases student unions are controlled by ideological factions attempting to use the union as a base of opera-

¹⁷ Metta Spencer, *op. cit.*, p. 367.

tions has also affected the AISF. The changing tactics of the Communist movement have also hurt its student allies. Although Communist support for World War II permitted the AISF to function legally while the nationalist student movement was forced underground, many students felt that the Communists were traitors to Indian nationalism. Immediately after Indian independence, the Communists violently opposed the Nehru government, thus alienating a large proportion of the student population. More recently, the split in the Communist movement caused by the Sino-Soviet dispute has disillusioned many leftist Indian students and complicated the functioning of Communist organizations. In many areas, the AISF's identity as a Communist student organization has been purposely obscured or de-emphasized. Despite this nonideological policy, AISF students in Calcutta, many of whom support the left-wing (pro-Maoist) Indian Communist Party, recently took a leading part in student demonstrations. Nevertheless, even these Calcutta demonstrations, led by ideologically committed students, erupted over purely local campus issues and spread only when the original student demands were not met by the university authorities.

In the recent past, right-wing student political organizational efforts have been quite successful in some regions. One of the most important student organizations in India today is the *Akhil Bharatiya Vidyarthi Parishad* (All-India Students' Organization). This group, commonly called the *Vidyarthi Parishad*, has claimed to be nonpolitical despite strong evidence suggesting that it is the youth wing of the rightist Hindu communalist parties, and particularly of the *Jan Sangh*. The *Vidyarthi Parishad* has concentrated on a culturally oriented programme, avoiding broader political issues as much as possible. It has appealed for patriotism and was active in the nationalist upsurge following the Indo-Chinese conflict of 1962.

It is difficult to generalize about post-Independence student political participation in India. It is true that there is no longer a unified student movement in the country and that only a tiny fraction of the student population is involved in the day to day operations of student political groups. On the other hand, it is clear that students have taken part in active politics and have had a major impact in some areas. Deteriorating conditions in universities and a general low morale in academia has led to sporadic

putes caused several splits in the organization, and by 1958 the NUS was, for all purposes, dead.

The National Council of University Students of India (NCUSI) was subsequently formed to fill the vacuum created by the disappearance of the National Union of Students. This organization has faced many of the same problems that plagued its predecessor—opposition from educators and political leaders, student apathy, and personal ambition among its own leaders. The Cold war has created the problem of foreign financial support. The Soviet Union has financially supported the Communist sponsored All-India Students' Federation, while the NCUSI has received funds from Western sources. It is unlikely that the NCUSI will become the representative student association in India, although it has tried to keep aloof from partisan Indian politics and has occasionally been a moderating influence on the Indian student community by encouraging students to work with administrators rather than resort to immediate agitation.

The political parties in India have adopted an ambivalent attitude toward students in recent years. The Youth Congress was formed in 1949 by the All-India Congress Committee. Despite its claim that it was India's largest youth organization, it did not attract much attention and served mainly as a "front group" for aspiring Congress politicians. Because the leadership did not encourage open political discussion, the organization failed to draw able, politically-oriented youth, and the Youth Congress had few active chapters before its dissolution in 1965 because of internal political conflicts.

The oldest national student organization in India is the All-India Students' Federation (AISF), which has existed without interruption since 1936. The AISF, under Communist control since 1940, has lost much of its support and a large proportion of its membership. In 1955, the AISF claimed a membership of one hundred thousand, with major concentration in West Bengal, Andhra, and Kerala, all centres of Communist political support.¹⁹ The AISF is, however, weak in areas without Communist strength.

Despite the considerable efforts the Communist Party has made to cultivate the students, the general decline in student organiza-

¹⁹ Myron Weiner, *op. cit.*, p. 168. Although Weiner's book is more than ten years old, this generalization is still true in 1971.

munists associated themselves with strikes on thirty occasions, the *Jan Sangh* twice, and other parties seventeen times. In 1964, three per cent of the agitations were due to nonacademic issues; in 1965, the figure rose to 5 per cent, and in 1966 to 17.4 per cent. In 1966, there were 2,206 demonstrations, of which 480 were violent. Only two years before, there had been 700 demonstrations and 113 violent outbursts.²¹

There are important regional variations to student politics in India. While "indiscipline" of various kinds, related mostly to campus issues, occurs in every state, a number of areas have not been affected by major student disturbances concerning broader political issues. States such as Maharashtra, Assam, Rajasthan, Punjab, and several others have not been directly affected by student activism, and no strong politically-oriented student movements exist in them. In these areas, students have not even been particularly active in election campaigns, a popular and generally acceptable means of student political participation.

Other Indian states, notably West Bengal, Uttar Pradesh, Andhra Pradesh, Bihar, and Tamilnadu have seen very substantial student participation in politics on various levels, and several, most particularly West Bengal, have active and continuing student political movements. There are few generalizations possible about regional variations in student activism. Local political questions, the situation of the universities in particular states, and traditions of activism and of radical politics all effect the nature of student movements. The political stability of the state itself also plays a role. Bihar, for example, has been especially unstable politically in recent years, and its students have become involved in state political issues, as well as in campus politics.

It is worthwhile to examine briefly students politics in several states, since regional differences will show up geographically in these instances. The most volatile state in India at the present time, and the one with the most active and radical student movement is West Bengal. College students, particularly from the Calcutta area, have been one of the main forces behind the Naxalite movement in the state, and many young people from the universities have become full-time revolutionaries. The continuing turmoil on the campuses, much of which is related to the struggles

²¹ A Correspondent, "Student Indiscipline Under Study," *Thought*, 17 (October 20, 1966), p. 11. See also *Statesman*, (December 19, 1966).

outbursts of frustration, usually related to local campus issues. In general, the concern of the student movement has shifted from societal concerns to campus ones, although there are dramatic exceptions to this comment. Student political involvement continues in India, stimulated in large part by the severe stresses evident in Indian social and economic life.

V

No other issue in Indian educational life has received more publicity than the problem of "student indiscipline." Violence is a distinctive characteristic of student indiscipline in India. In the Hindi-speaking areas of northern India, student agitation has often involved destruction of private and university property. Even local agitations, such as protests against an increase in tram fares in Calcutta, are often accompanied by violent student outbursts. This tendency toward violence is perhaps related to the lack of channels through which the deeply frustrated Indian students can voice dissent. The widespread publicity given to student indiscipline may, however, obscure the statistical fact that most Indian colleges have not been plagued by student unrest.²⁰

The causes of the student unrest that swept northern India in 1966 are typical of the factors which have stimulated such agitation since 1947. It is difficult to discern one key cause for the 1966 agitation, for in most instances local grievances stimulated a demonstration or protest. An analysis of some 280 student strikes and demonstrations which took place in 1964 gives some indication of the causes for student unrest. . About one hundred strikes were stimulated by demands relating to examinations and the administration of educational institutions. Another sixty had their origins in protests against the police or other government functionaries; miscellaneous causes accounted for the rest. In most of the cases, there was no overt political motive. The Com-

²⁰ The literature on student unrest in India is quite extensive, particularly with regard to the very recent period. While much of the available sources are in newspaper accounts, a number of books and articles have also appeared. For a listing of published materials up to 1970, see P. G. Altbach, *A Select Bibliography on Students, Politics and Higher Education* (revised edition), (Cambridge, Mass: Harvard Center for International Affairs, 1970), pp. 24-26.

the student movement turned toward the Naxalites and abandoned parliamentary politics altogether. It was at this time that terrorist tactics in Calcutta were instituted by some segments of the student movement. It is very difficult to predict the direction of the Bengali student movement, although it is clear that the movement will continue to be both radical and prone to militant activism.

West Bengal stands in sharp contrast to the rest of India with regard to student activism. In Tamilnadu, for example, students have been involved in political action for more than five years, generally in support of the DMK, now the ruling party in the state. But this activism has been of a fairly disciplined nature, and has with some exceptions been nonviolent. The 1965 student campaign against the use of Hindi as India's national language brought violence to Tamilnadu, and sparked a responsive chord in the general population. A Student's Action Committee from colleges throughout the Tamil-speaking areas coordinated demonstrations and strikes, which sometimes became violent.²² The DMK strongly supported the students, and the 1965 agitation helped to pave the way for the party's assumption of power. Students were instrumental in the two elections in which the DMK has been successful, and provided many of the volunteer workers for the party. However, no continuing student organizations have developed in Tamilnadu, although many students have a high degree of political consciousness and are willing to demonstrate when the DMK or student leaders call for direct action. By and large, the campuses have remained quiet, and there is little of the sporadic indiscipline which is evident in north Indian universities.

Bihar shows significant regional variation trend in student activism, which is also reflected in some parts of U.P.²³ Bihar politics has been unstable in the recent period. No party, nor even some factions of the various parties could maintain control over the state government and succession of faction-ridden ministries ruled the state. In addition, the universities became enmeshed in state politics, and academic institutions were used for political purposes. The students reacted to this situation by supporting one or another

²² See "The English-Hindi Controversy," *Minerva*, 3 (Summer, 1965) pp. 560-85.

²³ Amar Kumar Singh, *op. cit.*, presents a detailed picture of the Bihar situation. This account is based largely on his description and analysis.

of the Naxalites against their political enemies as well as against the government and university authorities, is an example of the importance of the student movement. Indeed, without the participation of the students, it is unlikely that the "urban guerilla movement" in West Bengal would have much support.

It is important to note that student political involvement, even of a revolutionary nature, is not new to West Bengal. Calcutta was the home of the terrorist wing of the nationalist movement in the early years of the twentieth century, and students were active in this kind of movement from the early days. Subhas Chandra Bose, whose brand of nationalism was more radical and more violent than Gandhi's had strong support among Bengali students. The strength of left wing political parties in the state has also had an impact on the student movement, and has provided active non-campus support for student radical groups. Indeed, in general, the West Bengal student movement has been involved with adult political parties. Student activism has not been directed, in general, at educational issues but rather toward broader political questions. Of course, demonstrations at examinations or other spontaneous protests related to student conditions or problems have also taken place with substantial frequency, but these have not been in the mainstream of Bengali student activism. The political impact of the student movement in West Bengal cannot be underestimated. The movement, and its adult counterparts, has been able to keep West Bengal in a state of turmoil over an extended period. It is clear that some section of the Calcutta middle class support, or at least tolerate the student movement. Thus, the student movement has a long term role in West Bengal politics, although it probably is not in a position to achieve substantial political power in its own right.

It is significant that the student movement in Calcutta especially has moved in an increasingly radical direction in recent years, perhaps indicating a sense of frustration with other forms of politics. In 1966, Calcutta was convulsed by demonstrations in favour of a United Left Front anti-government campaign. These demonstrations were spearheaded by students. Students were later active in the electoral campaigns which brought a leftist government to power in West Bengal. Later, however, when the Communist Party (Marxist) and its allies in the government were unable to implement a radical programme, much of

has been relatively little unrest in either of those states.

Thus, the shape of student activism in the post-1965 period is difficult to clearly explain. There are three general trends—student involvement in broader political movements which have a firm ideological base, as is most graphically reflected in West Bengal and in groups like the All-India Students' Federation; student involvement in political campaigns based on outside demands and issues, such as the language agitation in Tamilnadu or the anti-corruption efforts of the Orissa students; and finally student involvement in sporadic demonstrations, unrest, and indiscipline related to local collegiate and academic matters. This latter aspect is the most important aspect of student activism in India, and accounts for the vast majority of the cases of unrest which cause university officials so much difficulty.

This latter type of unrest deserves some attention, if only because it is so widespread and receives a good deal of attention in the press. The causes of local student "indiscipline" are varied and often difficult to explain. On the most trivial level, students claim that one of their fellows has been mistreated by a hostel warden or some other official and go on a small rampage on campus. Increases in tram fees or cinema prices can cause destructive agitations. Examinations are a frequent cause of indiscipline and agitations.²⁴ Difficult questions can cause massive complaints from students and occasional demonstrations. Indeed, university officials in many institutions must take elaborate precautions in order to see that it is possible to hold examinations. Students also agitate over educational questions of a more significant nature. Language policies in universities, curriculum decisions, the hiring or firing of professors or administrators, and other matters can precipitate demonstrations. The intensity of these *ad hoc* and sporadic agitations varies greatly. Some are mild and respectful petitions to appropriate officials, while others can be massive and highly destructive demonstrations involving the loss of life.

Another type of *ad hoc* demonstration which has become important especially in Uttar Pradesh and Bihar is student involvement in academic crises on campus. The recurring crises at Aligarh Muslim University, Banaras Hindu University, and Allahabad University are ample testimony to the power of students in inter-

²⁴ Margaret Cormack, *She Who Rides a Peacock: Indian Students and Change*, (Bombay: Asia Publishing House, 1961), p. 204.

faction within the universities, in helping various groups, mostly non-Congress, in state elections, and in keeping the academic system in a general state of turmoil. This was possible in part because academic leadership was decimated by political maneuvering and few administrators or faculty members had the morale necessary to keep order on the campuses. Students sensed this situation, and not surprisingly took advantage of it.

Unlike West Bengal, the development of a major student involvement in politics in Bihar did not bring with it any major student organization. Activism remained sporadic, and oriented around a single university for the most part. The various political parties had their supporters at each university, and these individuals were able to organize militant demonstrations whenever the situation seemed favourable. Political traditions, once developed, are difficult to get rid of, and it is likely that Bihar will continue to be involved with student activism for some time in the future.

Orissa shows a different type of student involvement in politics which is typical of several parts of India. Students in Orissa have in general remained quiet and uninvolved politically. However, a coordinated series of student demonstrations throughout the state forced the resignation of the chief minister in 1964. Student leaders charged that the state chief minister, a Congress politician, was guilty of corruption and demanded his resignation. He was forced to resign, and the students won a major victory in the state. The Orissa agitations were carried out by a well-organized student committee with representatives from many of the colleges in the state, thus proving that it is possible for *ad hoc* student agitation in an area relatively free of student unrest to be successfully organized. After their victory, Orissa students returned to their classrooms, and have not been notably involved in activism since that time. This situation is reflected in several other Indian states.

In Andhra Pradesh, the agitations over the creation of a separate Telengana state have involved students, although there is no active political student movement in the area. In Maharashtra, students were involved in the Samyukta Maharashtra Samiti in the late 1950's in favour of a separate Marathi speaking state with Bombay as its capital. This movement was ultimately successful. In both Andhra Pradesh and in Maharashtra, student involvement in particular campaigns did not mean that the movement continued after the specific effort was completed, and there

education remains a joint responsibility of the central and state governments.

It is clear that student activism is an established and continuing part of the Indian academic and political scene. India fulfills all of the preconditions for an active and potentially volatile student movement. It has a long history of student involvement in politics, the potential, although not at this time the reality, for political instability, an academic system which is clearly subjected to many stresses and which does not serve the student population very well, and a large and in some areas politically sophisticated student population. Indeed, because of India's large student population—the third largest in the world—and the diffusion of higher educational institutions to all parts of the country, it is possible to imagine that Indian students could at some point play an absolutely critical role in national or regional politics.³⁰

With the exception of the period of the nationalist movement, Indian students have not been able to link up with viable political organizations or movements outside the campus in all but a very few instances. This has meant that the potential for effective student involvement in politics has been relatively limited. In addition, with the exception of West Bengal, there are few politically sophisticated student leaders capable of organizing effective and continuing political organizations based in colleges and universities. This situation seems to be changing somewhat, as radical student discussion groups are founded at such centres of higher education as Delhi and Bombay.

The pattern of post-Independence student activism in India has been one of sporadic regional or local student movements usually concerned with limited non-ideological issues. Such movements have been successful in a number of instances, and have certainly played a key role in politics in such areas as Bihar, Tamilnadu, U.P. and other states. It is very likely that this pattern of student involvement in regional politics will continue, and given changing local situations, change with differing political events. It seems clear that without major shifts in the political or economic situation at the centre, student activism will continue to be based in regional and local politics and not take on an all-India nature.

³⁰ See Philip G. Altbach, ed., *The Student Revolution, op. cit.*, for case studies of student movements in other developing countries, as well as for theoretical studies of student activism.

cedented freedom, particularly in view of India's strict family system. The generational problem, present in almost every society, lies somewhat below the surface in India, although it probably influences the students by causing resentment against constituted adult authorities.

The economic uncertainty of many Indian students is clearly a cause for ambivalence and indiscipline. Many students hold parttime jobs in order to pay for their educational expenses and must therefore divide their attention between job and university career. It has become increasingly more difficult for graduates, especially in the liberal arts, to obtain suitable employment. Students who cannot obtain jobs frequently return to universities to do graduate work even though they are often not interested in the academic preparation involved. The number of students who do not finish their college education is also quite high, and many of these former students remain on the campus, since employment is not always obtainable. Well over half of those who enter college in India do not obtain a degree.

Related directly to the economic problem are the difficult conditions under which many Indian students must study. In addition to inadequate university facilities, many students are unable to provide the minimum necessities of life for themselves. A survey of students in Calcutta pointed out that a substantial number were undernourished. In urban institutions particularly, students often must live in crowded and unsanitary conditions.²⁹ These factors cannot but increase the frustration and alienation of a large part of the student population.

Political, social, psychological, economic, and educational issues are intertwined in India, and all have contributed to student unrest. Present educational trends are likely to continue. Despite the warnings of educators, unplanned expansion of the educational system continues unabated. The government is unwilling to restrict educational expansion even though it is unable to allocate sufficient funds to maintain educational standards. As higher education becomes available to increasing segments of the population, the value of the Bachelor's degree decreases. Centralized standards have become even more difficult to enforce, since several new universities are established each year, and higher

²⁹ Ministry of Education, *op. cit.*

within colleges and universities themselves. But it is not enough to state that the academic authorities are not completely responsible for the failure to end student "indiscipline" in India. The fact remains that steps which could be taken by universities and by those official agencies concerned with education have not been taken, and little initiative has been shown.

The governance of most Indian universities is severely out of date and in need of revision. Yet, practically nothing has been done to modernize the ways in which universities are administered. Simple matters of bureaucratic inefficiency and a rather rigid hierarchical structure add to student frustrations as well as hinder improvement in higher education. More far reaching changes, such as the inclusion of students or even junior staff in the governing bodies of educational institutions have not been proposed or implemented. The establishment of *ombudsmen*, individuals who will have the responsibility for looking after the interests of students and who will be responsible to them, has become a popular innovation in the United States and in some European countries. It has been not attempted on any substantial scale in India, and could substantially improve relations between students and colleges and universities. In short, there are reforms which academic institutions could make which would cost little but which would ameliorate the present situation.

Similarly, central and regional agencies concerned with higher education have been slow to propose and implement programme and reforms which might deal with student discontent. The University Grants Commission, which has taken a substantial interest in student affairs, has not been able to propose any meaningful changes. Conferences of student leaders and reports on aspects of student problems have not been translated into action, and very little money has been spent on efforts to improve the situation of students. Where funds have been expanded, such as on the construction of student hostels and centres, little in the way of new programmes or facilities have been established. Thus, there has been no positive leadership, either from the students themselves or from academic or government authorities in efforts to ameliorate the short term and immediate problems of students.

It seems clear that the objective conditions of most Indian students will remain virtually unchanged. Higher education will continue to expand, students will continue to study in substandard

The relative political stability of the country, perhaps particularly since the 1971 elections, should make the emergence of a major national student movement rather difficult. In addition, the importance of the university system as a key to social mobility and to employment will make relatively few students willing to take the risks necessary for major student political involvement.

Should the situation in India change, either politically or economically, however, it is entirely possible that a student movement of massive proportions could emerge. The example of Ceylon is perhaps especially relevant here. The history of Ceylon's student movement is short, and Ceylonese students have been involved on a much smaller scale in politics than have students in India. Yet, when it became clear to many students and unemployed or underemployed graduates that the government of Prime Minister Bandaranaike, despite its radical rhetoric, was unable to deal with the social problems of the country and was unable to find jobs for university graduates, an effective and militant student movement was organized. There is no reason to doubt the revolutionary potential of Indian students in this kind of situation. It is unlikely that a national student movement could effectively be organized in India due to the distances and the large and diffuse student population. But major and potentially effective regional student movements are a distinct possibility in India if the overall political and economic situation should deteriorate.

Efforts to deal constructively with the problems of student "indiscipline" in India have thus far proved unsuccessful. Given the potential for effective political activism and the reality of continuing disruption of the educational system due to local demonstrations, disruptions of examinations, and similar agitation, the failure of the academic authorities to deal with student unrest is a serious national problem. There is, of course, only a limited amount that academic authorities can do given the overall direction of Indian higher education, a direction which is not controlled by the universities but rather by public opinion, government and other external forces. Thus, the problem of continuing expansion and concomitant decline in available funds and perhaps in standards of education are part of the academic equation in India, and inevitably lead to increasing student discontent because of the fact that graduates are unable to obtain suitable jobs due to an oversupply of educated individuals and deteriorating conditions

A Note on Student Perception

DURGANAND SINHA

The academic crisis in India has many causes. This paper considers only one element: the differences in perceptions of reality which exist among the members of the university community. The focus is on the ways in which students view both the university and society.

It is generally admitted that the manner in which an individual perceives an event or a thing has a bearing on his attitudes and actions. The images that individuals form of facts and people quite frequently differ from group to group. The findings of this research paper show that differences in perception between students and teachers are particularly sharp and dramatic. And these differences naturally reflect on the two groups' interaction and behaviour in the context of the university. This study also has implications for society in general since the ways in which students view the world affect their actions in it.

Perceptual disharmonies are frequent in Indian Universities where the same incident is construed differently by students, teachers, and administrators. To cite an example, the viewpoints of students and teachers differ significantly when a university is closed following an agitation and strike by students. The administration and most faculty members consider it inevitable and the demonstrating and rioting students responsible for the disruption in the normal functioning of the institution. On

conditions and will continue to have difficulty in finding suitable employment on graduation. In this situation, the localized but sometimes violent and disruptive activism which has characterized the Indian scene for almost two decades will continue. Without stimulation from economic or political factors in Indian society, it is unlikely that a major student movement dedicated to revolutionary activism will develop on the all-India scale. Such a possibility, given the appropriate circumstances in India, should not be ruled out. But for the present, it would seem that there will be more of the same.

49 years and of college teachers from rural areas 45½ years, giving an overall average age of 48.18 years for the teachers.

The study consisted of two parts. The first dealt with the perceptions about people (stereotypes) and determination of hero-images and role-models. It analysed mental images which the students and teachers had regarding six categories of people—political leader, businessman, government official, teacher, modern young man, and modern young woman. For the purpose, a check-list of adjectives was utilized consisting of equal number of positive and negative traits and descriptions of behaviour whose valence had been empirically ascertained.

The subject was required to check the traits he considered descriptive of a typical politician, businessman, and so on as the case may be. Analysis was made on the basis of frequency with which the traits were ascribed to each category and their favourableness or otherwise. Differentials between the groups of students and teachers were analysed.

The perception of the same six categories of stereotypes was studied with the help of the semantic-differential technique. It consisted of twenty bipolar adjectives, and students and teachers were compared with regard to the mean scores on each of the twenty scales. This technique aims at analysing differences between concepts in terms of their meanings for the individual. The presupposition underlying the technique is that the meaning of an object for an individual includes not only the more obvious denotative meaning which can be readily stated, but also the more subtle connotative meaning which he can less easily described. The technique typically contains a set of scales listed down a page, at the top of which the stimulus (object, person, or event) is identified. Each individual scale comprises a number of gradations between an adjective and its opposite. The individual is asked to consider the stimulus in terms of each scale and to check his answer in the appropriate division indicating how much he believes the particular scale to be expressive of the meaning of the concept being rated. The "meaning" of the object for the person is the pattern or profile of his ratings on the different adjective scales, each bipolar adjective representing one scale.

It has often been suggested that with changes in values, the concept of eminence also undergoes a modification. Persons considered great by one generation are frequently repudiated by

the other hand, many students regard such a sheet-down as unreasonable, and blame the vice-chancellor and the administration for the disruption of academic life. Again, when in one of the violent disturbances in a university in Uttar Pradesh, the car of a senior professor was accidentally damaged by stones thrown by students, the act was perceived with disapproval by the teachers, they considered it uncalled for because the teacher whose car had been damaged was not involved in the matter against which the students were agitating. The students on the other hand, felt that the damage to the car as well as to university property was inevitable because the teachers had done nothing to condemn and punish the driver of a head of a department who was alleged to have misbehaved with a girl student. They felt the damage to the professor's car to be justified since he had ignored and done nothing against the driver's moral corruption.

Likewise, *gherao* of a vice-chancellor or registrar for hours is regarded by students as a legitimate and rightful way of protesting and getting their demands fulfilled. On the other hand, teachers look upon *gherao* as cruel intimidation and a morally unjustified pressure brought upon by a group on a helpless individual.

The convocation pledge of one of the universities says that the teacher should be perceived as "equivalent in status to the father." However, a large number of students start jeering when this pledge is read out at the annual convocation. The older generation of teachers naturally consider it disrespectful and feel that the statement had never aroused such disrespectful reaction in the past. Such marked differences in viewpoints about the same event are likely to cause misunderstanding and lead to disharmony and tension.

Therefore, as part of a larger research project (Sinha, 1971) it was decided to make a systematic investigation of students' perceptions about people and events, and to compare them with those of older generation of teachers. The study was conducted on a sample of 300 students at Allahabad University and a few colleges in the district. They were randomly selected from the lists of students maintained by the institutions. The average age of the university sample was a little over 19 years and of the college student 16 years. Likewise 150 teachers were selected from the same institutions. All of them were above 40 years of age. The average age of the sample from the university was slightly over

both groups. The comparison of the mean scores on the different Semantic-Differential Scales revealed only one to be statistically significant: the students viewing the businessman as significantly less short-tempered than the teachers. The qualities which stood out were dishonest, cruel, ugly, selfish, and uncultured. Of the nineteen qualities ascribed to a businessman by students, eight were positive and eleven negative. Among teachers, only six qualities were ascribed with high frequency of which four were unfavourable. Thus, on the whole, students tended to have a more complex and less unfavourable images of politicians and businessmen.

The students' perception of the government official on the Semantic-Differential Scale differed significantly from that of the teachers in twelve cases out of twenty. The students perceived the administrator as more cultured, kind, less timid, wiser, efficient, capable, farsighted, less short-tempered, purposeful, industrious active, and quick. They ascribed thirteen qualities to an official out of which seven were favourable and six unfavourable. On the other hand, all the seven qualities ascribed by the teachers were negative. Thus, the image of the government official in the minds of the students was relatively more favourable.

Both the students and teachers ascribed only favourable qualities to the stereotype of a teacher. The students, however, were significantly more positive on the dimensions of cultured-uncultured, courageous-timid, wise-foolish, capable-incapable, farsighted-shortsighted, purposeful-purposeless, industrious-lazy, and enthusiastic-unenthusiastic. On one scale the student's response, as compared to the teachers', found the stereotype significantly weaker. While the students ascribed to him thirty-one favourable qualities with a high degree of frequency, the teachers themselves listed only twenty. Thus the student's perception of the stereotype of the teacher was more favourable and richer in content.

The image of a modern young man among the students was revealed as generally favourable. They viewed him as honest, courageous, responsible, quiet, strong, farsighted, purposeful, hard working, enthusiastic and quick. On the other hand, the teachers found the stereotype of the modern young man significantly lacking on all these counts. Of the eleven qualities attributed to a modern young man by the teachers, nine were unfavourable. The overall image in the minds of students too

the subsequent. Similarly, traits and qualities believed to underly greatness get devalued and newer ones take their place. The choice of 'ideal person' and role-models gives an idea of the process of identity formation. Difference in the choice of persons considered worth emulating indicates the development of divergent subcultures and is likely to provide clues to intergenerational disharmonies. Thus, a hero-image test was used in which the subject was asked to name five great men whose lives had given him inspiration and influenced his behaviour. He was then asked to name two of them, in order of priority, whom he regarded as the greatest persons of all and to list the qualities which, in his opinion, made them great. The analysis of responses indicated the hero-image and the role models as well as the qualities considered as significant by the subject.

The second part of the study was concerned with the perception of events and situations by the student, and comparing it with that of the teacher. The technique consisted of presenting some recent incidents considered to be representative of common patterns of law-breaking behaviour and transgression of accepted codes of conduct. The study was done in two phases: first, six incidents were collected from newspapers and the subject was asked to indicate whether he considered the behaviour exemplified in each case as "proper" or "improper". The second phase was very similar to the first except that in the evaluative response, a third category of neutral alternative, *i.e.*, "neither proper nor improper" was added. The twelve incidents employed for the purpose were again typical involving certain socio-moral issues. The Semantic-Differential Technique revealed that in perceiving the political leader the students as compared with the older generation of teachers regarded politicians as significantly more irresponsible, less strong, less capable and less purposive. Most of the qualities ascribed to politicians by both groups were unfavourable; the students termed them partial, argumentative, greedy, flatterers, cunning, selfish, quarrelsome, hypocritical, jealous, proud, and so on with a high degree of frequency. Out of the twenty-one traits ascribed with a frequency of 30 per cent or higher, seventeen were unfavourable. The teachers' responses were even more unfavourable. Out of the fifteen qualities ascribed to a politician, all but one were negative.

The image of the businessman was equally unfavourable in

TABLE I
F/U RATIO OF STEREOTYPES

<i>Stereotypes</i>	<i>Groups</i>	<i>F/U Ratio</i>
Political Leader	Student	4/17 = .24
	Teacher	1/14 = .071
Businessman	Student	8/11 = .73
	Teacher	2/4 = .50
Government Official	Student	7/6 = 1.2
	Teacher	0/7 = 0
Teachers	Student	31/0
	Teacher	20/0
A Modern Young Man	Student	5/21 = .24
	Teacher	2/9 = .22
A Modern Young Woman	Student	12/8 = 1.5
	Teacher	4/4 = 1.00

There was a general agreement among the students and teachers about the preferred heroes and models whose conduct and behaviour they would like to emulate. Names like Gandhi, Nehru, Lal Bahadur Shastri were mentioned with a high degree of frequency and there was general agreement about them. The students' choice, however, had greater variety. Besides the three personalities mentioned above, they referred to a large number of figures from the political world like Bhagat Singh, Ram Manohar Lohia and Mao Tse-tung. Quite frequently they even named film stars and sports champions. All their models belonged to the contemporary world. The teachers, on the other hand, displayed greater agreement among themselves about their choice of heroes. They had received inspiration from personalities from the past as well as present time, not only political figures but religious and social reformers such as Tukidas and Vivekanand. Mythological and legendary personalities like Rama and Krishna quite frequently figured in the list of models given by the older

was unfavourable, their check-list ascribing twenty-one negative and only five positive qualities. The qualities which were perceived with high frequency were: quarrelsome, obstinate, indisciplined, careless, proud, greedy, angry, rebellious, impertinent, and so on. The favourable aspects were: courageous, agile, capable, hardworking, and sociable.

The students' perception of the modern young woman on the Semantic-Differential Scale was of a mixed nature. Most of the scores were around the midpoint of the scale or slightly lower. In this case, the students and teachers differed on only two out of the twenty scales; the students considered her more beautiful and capable. The check-list, however, revealed that out of the twenty qualities ascribed to a modern young woman, the students found twelve in her favour. The teachers gave her favourable ratings in four out of the eight traits in the check-list. Thus the students had a much more favourable impression of the modern young woman than the teachers.

The valence of the stereotypes was analysed by working out the favourable/unfavourable ratio (F/U ratio) of the traits. It may be noted that if the stereotype happened to be generally positive and the person concerned was perceived in a commendable light, the size of the F/U ratio was larger than one. In case the perception was hostile, the ratio was less than one; the smaller the value of the ratio, the more unfavourable the image in the mind of the subject. Table I gives the values of F/U ratios of the six stereotype groups. It shows that the images of a political leader and businessman were comparatively less unfavourable among students. The stereotype of a teacher was favourable. The image of a government official was comparatively more favourable in the minds of students, and unfavourable among teachers. The image of a modern young man was similar in valence among students and teachers, and both perceptions were slightly on the unfavourable side. The modern young woman had a favourable image among both groups of subjects though the students' impression was somewhat more positive.

It may also be observed that the number of traits rated by the students in all cases were greater than those by teachers. It shows that the stereotypes in the students' imagination were richer in content, more complex and varied than in the minds of the older teachers.

The students' response in these respects was similar to that of the teachers. But in regard to the remaining three incidents their perceptual response was distinctly different than the teachers. The incidents were: (1) Facing food scarcity, some persons went to the big grainshops in the city and looted them; (2) *Sadhus* in large numbers had started participating actively in politics; and (3) In many places, teachers had resorted to strikes to get their demands fulfilled. A comparison of the frequency of responses made by the students with teachers revealed that there was a significant tendency among students to approve of these incidents (Table II). In each case the X^2 -test revealed the differences to be statistically significant. Thus, the responses of the students were similar to those of the teachers in half of the incidents. They overwhelmingly disapproved of those incidents. As to the rest, the students were relatively more permissive.

TABLE II

PERCEPTION OF SOME CONTEMPORARY INCIDENTS WITH
SOCIO-POLITICAL IMPLICATIONS

(in percentage)

Incident	Group	Response	
		Proper	Improper
Looting of grainshop	Student	61	39
	Teacher	32	68
Active participation of <i>sadhus</i> in politics	Student	42	58
	Teacher	17	83
Resorting to strike by teachers	Student	61	39
	Teacher	40	60

It might be mentioned that many of the subjects resented dichotomizing their responses and felt uncertain about evaluating the incidents. Therefore, a second test of perceptual evaluation with twelve typical situations involving socio-moral issues was conducted. On this test, besides "proper" and "improper", a third

generation of teachers. By and large, the hero images and models among students seemed more varied and unstable, reflecting perhaps their relative lack of maturity and uncertain values.

However, despite the variegated choice of models, the students and teachers generally agreed on the qualities which make a person great; patriotism, statesmanship, social reform, humanitarianism, and so on were frequently cited. The students placed greater emphasis on "patriotism" and "social reform", while the teachers stressed "religions" relatively more frequently. In terms of the frequency with which qualities were mentioned, the rank-order correlation between the students teachers was .78, indicating a high degree of communality in the perceptions of the two groups.

Differences in outlook and attitude are reflected in the conceptual perception of events. It has been observed that an individual's perception pattern mirrors his innate needs and attitudes. It is also true, however, that the manner in which an event is perceived helps in shaping or modifying an individual's attitude and behaviour. In fact, this constitutes a two-way process. As attitudes and outlooks get modified, what is viewed as proper or improper, good or bad, undergoes transformation. Perception of events itself brings about a modification of attitudes. As such it was felt that analysis of perceptual and evaluative responses of students towards events and incidents would provide a key to the attitudes. For this purpose the "reaction to contemporary incidents test" was devised. It consisted of six incidents, collected from newspapers, involving infringement of commonly accepted codes which had actually taken place in recent years. Each incident had a socio-political implication behind it, and the subject was required to evaluate whether the behaviour depicted in each incident was proper or improper. An overwhelming majority of students (eighty per cent or more) disapproved of three of the six incidents: (1) While opposing a bill in Parliament a member got so excited that he burnt a copy of it inside the House; (2) A crowd of people demonstrating against the government entered the Legislative Assembly, turned out the members and held their own meeting till 4 o'clock in the afternoon; and (3) During a general strike and a *bundh* declared by a political party, some shops had been kept open in spite of the leaders' warning. At this, the crowd got enraged, damaged the shops and looted the goods.

TABLE III

PERCEPTION OF SOME SITUATIONS WITH SOCIO-MORAL
CONNOTATIONS
(in percentage)

<i>Situation</i>	<i>Groups</i>	<i>Responses</i>		
		<i>Proper</i>	<i>Neutral</i>	<i>Improper</i>
Transgressing the queue	Student	13	34	53
	Teacher	8	22	70
Telling a lie, if necessary	Student	39	35	26
	Teacher	13	23	64
Misappropriation of articles	Student	28	29	43
	Teacher	9	21	70
Taking revenge	Student	14	29	57
	Teacher	5	17	78
Disobedience towards father	Student	19	37	44
	Teacher	8	24	68

to make up their minds when confronted with socio-moral issues. Vacillation and indecision characterized their reaction against the quick and decisive judgment of the older generation. It may, therefore, be inferred that on socio-moral issues, the students were not only more permissive but also unsure about their reactions.

The Semantic-Differential Technique was also used in evaluating eight typical incidents having socio-political and moral implications. Ten bipolar adjectives constituted the scale. The results obtained on the two earlier tests were generally confirmed. The student generally perceived these incidents in more favourable light. They considered ticketless travel to be significantly less irresponsible, less violent, natural, less unsocial, less undemocratic, less unreasonable and less indisciplined. In seven out of ten counts, the differences were statistically significant. On man-handling and abusing the station master for the late running of a

category of undecided responses, "neither proper nor improper", was permitted. These incidents lacked political dimensions. All the same, each represented a violation of some accepted socio-moral code. On five of these, there was no difference between perceptions of the students and the teachers. An overwhelming majority of them disapproved of the following: (1) A person travelled without ticket because a lot of people did so these days; (2) An office assistant did not work hard in his office because other people generally avoided working properly; (3) A bank clerk viewed with greed the money deposited by others in the bank; (4) A person was unable to keep a secret revealed to him in confidence by his friend; and (5) A woman was having an extra-marital affair during her husband's absence.

Both groups of subjects were in favour of the remarriage of a young widow. On the remaining six incidents, there were interesting differences. Acceptance of money for past favours was approved by 15 per cent of the students while 57 per cent considered it improper and 28 per cent were undecided. As against this 8 per cent of the teachers thought it proper, 71 per cent improper and 21 per cent were neutral. Though the difference between the two groups was slightly below the level of statistical significance, there was a distinct tendency on the part of the students to take a less condemnatory stance towards the incident. On the other five incidents, there was significant difference between the two groups, the students generally being more permissive in their evaluation (Table III). These incidents were: (1) Since he had to reach his destination immediately, he pushed ahead of others in the queue and boarded the bus; (2) He believed that, if necessary, there was no harm in telling a lie; (3) An employee misappropriated articles received for the purpose of public health because they had been received in large quantities; (4) His friend had not repaid the loan taken from him. When he got an opportunity he saw to it that his friend was also put to heavy financial loss; and (5) He disobeyed his father because he felt him to be unable to appreciate problems of the youth.

The perceptual responses of students and teachers as depicted in Table III revealed that the students frequently approved of these incidents while the teachers looked upon them disapprovingly. The students also showed a higher proportion of uncertain or neutral responses indicating that they were frequently unable

The study indicates that the perceptual world of students is not the same as that of teachers. While the present data would not permit positing a radical and unbridgeable hiatus between the two, it certainly shows vital differences in outlooks. Students frequently approve of a behaviour which may be utterly improper in the eyes of teachers. Besides, the students are very often undecided and shirk from making judgments on socio-moral issues. Teachers, on the other hand, seem surer about their moral code and have little difficulty in pronouncing their judgments. This vacillating attitude is further strengthened by the fact that students display greater diversity and less agreement among themselves regarding their choice of role-models.

It would be futile to argue about the right or wrong of these perceptions. It is not the event but the *image* of it that shapes human attitudes and behaviour. An individual's own view of the world is vital. Thus the same object or event is likely to mean different things to different individuals, thereby connoting differing perceptions about the same experience. It is on these experiences that actions are based. The way an object is perceived or a person or event is judged and evaluated influences the actions. If there is divergence between individuals in their evaluations, it is probable that their actions with regard to the objects and events concerned would also be different. Therefore, if students' perceptions have begun to diverge from their teachers, it means that the very basis of their experience has begun to undergo transformation. Therefore, it is legitimate to expect that this divergence on the perceptual plane would inevitably have repercussions on their attitudes, actions and behaviour. An act perceived as "right", "proper", and "justified" by students would appear quite the reverse to teachers and *vice versa*, and their reactions towards it would also be divergent. Likewise, differences in hero-image and model pattern points to a divergence in value orientation, outlook and concept of greatness. Such differentials in perceptions and value orientation are likely to act as psychological barriers.

The trend may not, as yet, amount to alienation and estrangement between the students and faculty but it certainly points to the possibility of misunderstanding and tensional disharmonies between them if these perceptual differentials continue to exist or get enlarged.

train, the students' responses differed from their teachers' in only three out of ten comparisons. They were more positive on responsible-irresponsible, natural-unnatural, and democratic-undemocratic dimensions. On walk-out from examination and demand for a fresh set of questions, the students and teachers differed significantly on five counts. The students considered it more responsible, natural, less unsocial, democratic, and reasonable. Both groups, however, had a similarity of views on the forcible harvesting of crops during an agrarian unrest. Only on three counts—responsible-irresponsible, natural-unnatural, democratic-undemocratic—the students' opinions were significantly more favourable.

An instance of bribery under the compulsion of poverty was believed to be significantly less improper by the students on eight out of ten dimensions. They considered it natural, less irresponsible, less unsocial, more reasonable and practical. *Dharna* by some state ministers at the Prime Minister's residence was viewed more favourably by the students in seven out of ten comparisons: proper-improper, responsible-irresponsible, civilized-uncivilized, violent-nonviolent, natural-unnatural, democratic-undemocratic and reasonable-unreasonable. Similarly, the *gherao* of managerial staff by workers to get their demands fulfilled was more strongly condemned by the teachers. The students generally regarded it as more justified on eight out of ten scales.

The analysis of student perceptions and their comparison with those of teachers have revealed some interesting differences. It is true that the groups do not yet diverge radically regarding their stereotypes and images. But they differ regarding their role-models and hero-images. The students confine their models largely to contemporary personalities from a variety of fields and display less agreement among themselves. Both groups seemed generally of the same opinion with regard to behaviours of transgressive nature approximately half of which they condemned. The students were distinctly more permissive and liberal in the way they perceived infringements of accepted codes of conduct. In comparison with teachers, they were also more uncertain and vacillating with regard to situations where socio-moral judgments had to be made. This attitude reflects a weaker super-ego and changing moral codes which seems to make them relatively unsure of their opinions.

and universities for expanding their admissions capacity.

This phenomenal rise in the proportion of women students and the anticipation, which follows therefrom, that an ever larger number of women will enter our educational institutions in the future, raises a number of interesting and relevant questions. First, one would like to know if the enlargement of educational opportunities for women and the facilities now being offered to them have benefited the cross-section of society. Our Constitution enshrined democratization as one of the main goals of education and anticipated that the democratic expansion of education would serve as an avenue of social and economic mobility. One would like to know if the expansion of opportunity for women's education has had the ameliorative and equalizing effect anticipated by our Constitution makers, or whether newly created educational opportunities have remained restricted in terms of social and economic status. Secondly, since the expansion of educational facilities and structures entails a heavy investment in terms of economic costs as well as time and energy on the part of a student, the question is what motivates women to go in for higher education. Lastly, one would like to know whether the education being imparted to them is directly or indirectly related to the potential roles of these women in society and the functions it fulfils both for the women themselves and for society as a whole. If the education currently being imparted does not bear a direct relationship to their potential roles, the related question would be as to how the content of education could be made more relevant to their potential roles and personal or social goals.

This paper is an attempt to answer these questions. The discussion is based on data drawn largely from a study of women undergraduates in two women's colleges affiliated to the University of Delhi.¹ These colleges were selected on the basis of certain

¹ The data used in this paper are drawn from a study of the Social Background of Women Undergraduates of Delhi University. It was supported by a Junior Research Fellowship of the University Grants Commission. I am grateful to the Commission for the same. I am also grateful to Professors M.S.A. Rao and Andre Beteille for help and advice during the course of the study. I thank Dr. Amrik Singh for comments and criticism on an earlier draft of this paper. I am, however, alone responsible for the views expressed herein.

Women's Higher Education: Recruitment and Relevance

KARUNA AHMAD

Education in traditional India was a protected preserve of the males of the socially and economically superior castes. Women, members of the lower castes, and untouchables were denied access to institutions of education and learning. Some of the prejudices to which women were particularly subject in traditional society underwent gradual decline during the early part of this century under the campaigns carried out by social reformers for the social amelioration of women, but the proportion of women enrolled in educational institutions remained relatively small.

Since independence, the proportion of women in educational institutions has rapidly increased as a result of the encouragement offered to traditionally under-privileged sections, changing socio-cultural attitudes, and greater investment in education. Thus, the enrolment of women students in universities and colleges increased from 43,126 in 1950-51 to about 689,086 in 1970-71—an overall increase in proportion to total enrolment in universities and colleges which rose from 10.1 per cent during 1951-52 to 22.1 per cent during 1971-72 (India, 1972: 116). The Kothari Commission on Education (India, 1966) suggested that the proportion of women's enrolment should be raised further to 33 per cent of the total student enrolment in universities and colleges. Indeed, there is already a greater demand for facilities for women's education, as seen by the great pressures brought upon colleges

students' styles of living and home environment of the students, the homes of nearly sixty students were visited and their parents interviewed. These interviews were always personal, informal and unstructured.

Patterns of Recruitment

Education of women in Indian society is closely related to their social position, and their chances of receiving education are determined by the sanctions imposed by that status. Most parents see the education of boys as an investment for it prepares them for their potential roles as breadwinners. On the other hand, the education of women is viewed as an expenditure which, wherever necessary, should be avoided. Besides, parents do not perceive any direct relationship between education and the potential social role of their daughters as housewives.

These social constraints directly affect the educational opportunities and chances of women in Indian society. Parents, who cannot afford the cost of educating their daughters are too often willing to allocate their meagre economic resources for the education of boys and are reluctant to invest in the education of girls. In effect, education of boys is given priority and the family's scant financial resources are usually directed to the education of sons to an almost total exclusion of the education of daughters. Under the circumstances, women are invariably prevented from going in for education even if they may have the psychological and intellectual potential for it (Ross, 1961: 211).

Since family status is an important determinant of educational opportunities for women, it is differentially exploited by women occupying different positions in the social structure. Some of the structural features of society that may have a bearing upon their educational chances are caste, occupational position and income level of their parents. The significance of caste and its close link with Indian education has been recognized for a long time. Several social scientists have commented upon it, and studies carried out in different parts of the country have shown how it is usually the children from relatively higher castes that are able to take advantage of higher educational opportunities. (See Shils, 1961: 20; Misra, 1963: 54; Kamat and Deshmukh, 1963: 5-6; Desai, 1953: 17; Shah, 1964: 19-22; Parekh, 1966: 56; Naik, 1965: 22, 108). However, the significance of caste as a determinant

objective criteria, such as type of management, location and distance from the university campus, social background of students, degree of discipline (the criteria used being the number and type of cases of indiscipline, such as partial or general strike, peaceful or violent demonstrations, etc.), the pattern of faculty-student relationship as well as the images held of the colleges.

The selected colleges² presented interesting contrasts especially in respect of their images. For instance, College A was considered elite and fashionable and was believed to attract students from the upper classes. Located on the university campus, it enjoyed a reputation for offering better educational facilities as well as scope for extracurricular development. College B, on the other hand, was identified with conservatism and tradition and was believed to attract students from the lower middle classes. It was located away from the campus and since it had been in existence only for a few years, its academic standards were considered relatively poor.

The data were collected through personal interviews with 186 students enrolled in the selected colleges. They were selected on the basis of a random sampling technique using caste, father's education, occupation and income as the determining variable.³ It may be mentioned that the study tried to combine together the advantages of anthropological field techniques with sociological survey. The investigator spent considerable time getting acquainted with the students, attended classes with them, and occasionally joined them in their extra-curricular activities. Even while a schedule was used for data collection, maximum flexibility was allowed in its administration, and questions were often explained and even rephrased to suit individual cases. Partly to cross-check some data, and partly to get a better understanding of the

² I refer throughout this paper to the selected colleges as College A and College B in order not to disclose their identities.

³ The total number of students in two colleges at the time of investigation was about 1590 of which 817 were in College A and 773 in College B. These were studying in the various Bachelor of Arts classes. In July 1963, a field census of all the students was undertaken and information regarding the caste, sub-caste, religious affiliation, and regional background of the students as well as the occupation and official rank of their fathers, parents or guardians was collected. On the basis of this preliminary information, the sample comprising 186 students was selected for intensive detailed investigation.

where both parents were highly educated. In 39.2 per cent cases the father had received education up to the graduate level, while the mother possessed only medium or poor education or was completely uneducated.⁴ Parents of 29.6 per cent had studied up to middle school while 21.5 per cent were daughters of parents with poor educational qualifications. Even though the girls from families where both parents or at least the father is 'highly' educated predominated, it is significant that a sizable percentage of girls are the first generation of educated women in their families. It shows that the education of girls has come to be valued even by some of those parents who had been themselves deprived of the opportunity of receiving it (Also see Shah, 1964: 24).

The pattern in respect of occupational and income levels of the girls' parents was similar to the one about education. About 33.7 per cent girls came from families of senior administrative and managerial personnel in public and private sector organizations and senior professionals; an equal proportion belonged to families of self-employed persons in business such as industrialists, wholesalers, financiers and big contractors.⁵ Another 29.0 per cent girls

⁴ For purposes of this study, educational qualifications and attainments of girls' parents were ranked into three categories, namely, high, medium, and poor. Those who had studied up to graduation or beyond were assumed to possess 'high' educational level. Matriculation and intermediate were considered as constituting 'medium' educational level, and education up to middle level or below was considered as 'poor'. The parents of the respondents were subsequently divided into four categories according to their educational level. Cases where both parents were graduates or were more qualified were placed in the first category, while cases in which only the father of the respondent was graduate and the mother was less educated were put in the second category. Both these categories were considered as constituting the category of 'highly' educated parents for purposes of analysis. The third category included cases wherein the father had 'medium' education and the mother had equal or lower qualifications. Parents with 'poor' or little education were placed in the last category.

⁵ The basis of classification of occupations was both job requirement and income. Further, occupations were also regrouped into three broad categories, namely, high, medium and low. Senior administrative personnel, senior liberal professionals, and big businessmen who tend to predominate in higher income brackets constituted the class of 'high' occupations. The rentiers and pensioners, the junior administrative personnel and persons in junior liberal professions as well as small traders form the 'medium' occupational category. The manual

of educational opportunity has been overemphasized. Caste is significant not in itself but because of the congruence between caste, rank and economic position. (See, for instance, Srinivas, 1962: 7-8; 1966: 96; Beteille, 1965: 103, 201; Rao, 1951: 201). By and large, the lower castes are poor, and it is their poverty, rather than caste status, *per se*, that tends to bar them from enjoying the fruits of new educational opportunities. Caste is, thus, important as an expression of the inequalities in the economic structure.

The close association between caste and economic status is amply demonstrated by our study. Superficially our data showed that college education was a monopoly of students from traditionally superior castes as they formed the majority of the students enrolled for higher education. The women from lower castes constituted barely 2.7 per cent or five out of a total of 180 students sampled for this study from the two colleges. However, the few students belonging to lower castes came from economically well-off families. For instance, in three of the five cases, the parents of these girls held high salaried jobs and were themselves highly educated. The fathers of three and mothers of the remaining two were fairly highly educated. Thus the disadvantage of caste was in all cases offset by their high economic status.

The economic status of a family is related to a number of social and economic variables, all of which may be used. But the most important ones are educational level, occupational status and income level of the family. These variables are closely interlocked in the social structure and influence one another. For instance, the chances are that the higher the level of formal education attained by a person, the more prestigious and lucrative would be his occupation. Because of widespread unemployment, this congruence has begun to break down recently, and there may be situations in which circumstances of a highly educated person may force him to settle for a lower occupational position. Again, there are some professions, such as teaching, where the occupational prestige may be higher than the income. Even so, the close link between the different variables is widely recognized in society and is also revealed by the data.

The data on parents' education revealed that out of the total students interviewed, as many as 9.7 per cent came from families

zation of educational opportunities would increasingly draw the erstwhile underprivileged sections of the population into educational institutions has remained largely unfulfilled. Of course, there has been democratization in one sense, namely, that accessibility of educational opportunities for women has expanded and an increasing number of women now go in for higher education. However, this democratization has had little equalizing effect since accessibility to education has remained restricted in terms of class and economic position, Naik focussed on this problem when he said, "Educational development, particularly at the secondary and higher stages, is benefitting the 'haves' more than the 'have-nots'. This is a negation of social justice and of 'planning' proper" (1965 : 22). There has been no observable shift towards equalization of educational opportunities among women and those from lower social and economic strata continue to remain either unrepresented or under-represented in the sphere of higher education.

Another dimension of this inequality manifests itself through access to particular types of educational institutions. For example, certain institutions enjoying a reputation for academic excellence, quality of teachers, facilities for extracurricular activities and so on may draw students from one social strata, while others may draw its students from another strata, even though there may be no difference in the fees charged. In fact students themselves may show preference for certain institutions on the basis of their family status.

These observations were confirmed by this study. It was found that in spite of sharing a more or less common religious, caste and regional background the students of these two colleges differed with respect to the education, occupation, and income level of their parents and their own educational background. One college has a greater concentration of students from families with a "high" occupational and income level. For example, fathers of 63.6 per cent girl in College A and of only 28.8 per cent in College B were pursuing "high" occupations. On the other hand, fathers of 64.3 per cent in College B and 33.4 per cent in College A were engaged in medium occupations. Again, if income levels are divided into two broad categories using Rs. 800 as the dividing line, then College B got 67.9 per cent students from families earning less than Rs 800 as against College A which got 63.6 per cent from

belonged to families of junior administrative and technical personnel in public and private sector organizations and junior professionals. The percentages from other occupational levels were 2.7, from families of pensioners and rentiers, 18.8 from families of shopkeepers and retailers, 2.1 per cent from those of artisans and menial workers. Again, 30.1 per cent girls belonged to families whose monthly income ranged from Rs. 1201 to above Rs. 2000, and another 33.9 per cent were from families whose income ranged between Rs. 801 and Rs. 1200. Only 34.4 per cent girls belonged to families having a monthly income between Rs. 201 and Rs. 500.

Occupational position and income are closely interrelated. Of the forty four girls whose fathers are engaged in senior administrative jobs, 21 had a monthly income between Rs. 1201 and Rs. 2000. Three belonged to the over Rs. 2000 bracket while the fathers of another seventeen earned between Rs. 801 and Rs. 1200 per month. Thus, most of the fathers in this occupational category were said to be earning fairly high incomes. The same is true of those who are running big businesses. Out of 44 students in this category, fathers of twenty two were stated to have an income of more than Rs. 2000 per month, while 19 earn between Rs. 1201 and Rs. 2000 per month.

On the other hand, of the 54 girls whose fathers are holding junior administrative posts, none earned more than Rs. 800 per month, thirtyfive of them are drawing between Rs. 201 and Rs. 500 per month. The fathers of five girls earn less than Rs. 200. Similarly small traders also tend to be concentrated in the lower level of the income hierarchy. Of the 35 small traders, 12 earn between Rs. 201 and Rs. 500, and nine less than Rs. 200 per month.

It is clear from these statistics that the accessibility of college education is restricted to girls from families of high economic status (See Myrdal, 1968: 1805). The constitutional goal of promoting democratization through expansion of education has not achieved any significant measure of success, and the expectation of our educational planners that expansion and democrati-

workers and artisans belong to the 'low' occupational category. Similarly, the income categories were regrouped into high, medium and low. A monthly income of Rs. 1201 or above was 'high', of Rs. 501 to Rs. 1200 was 'medium' and that below Rs. 500 was 'low' for purposes of analysis.

The second type of schools are Hindi medium aided schools, although some of them also offer English as an optional medium of instruction. They are run by private organizations or trusts, and receive partial aid from the government. The tuition fee in these institutions is less than in the English medium schools. Consequently the majority of the students in these schools are drawn from the middle class, mainly from its middle ranges. Facility-wise, such as library, sports and extracurricular activities, they stand in between the first and the third type of schools.

Finally, in the third category are the government schools. The total cost of maintenance of these schools is met by the government and consequently the tuition fees are comparatively low. But the various facilities are either missing or poor and there is little emphasis on the provision of an all-round education. The classes are generally overcrowded and the teacher-student ratio is very high.

Table I presents the distribution of the students of the two colleges for type of school attended by them. It shows that the proportion of girls from English medium schools is much higher in College A than in College B. At College A such girls formed two-fifths of the student population, while in College B they were about one-eleventh of the student body. On the other hand, while girls from government schools formed barely one-sixth in College A, at College B they formed one-fourth of the student body. It is also significant that only 20.4 per cent girls from government schools joined colleges in Delhi. This was so in spite of the fact that out of the total schoolgoing population in Delhi, an overwhelming majority studies in government schools which are far more numerous than the other schools.

TABLE I
TYPE OF SCHOOL BY COLLEGE

S. No.	Type of School	College A	College B	Total
1.	Government schools	15.1	26.4	20.4
2.	Hindi medium aided schools	30.3	46.0	37.6
3.	English medium schools	40.4	9.2	25.8
4.	Others	14.2	18.4	16.2
	Total	100.0	100.0	100.0

families earning above Rs. 800. This attitude persisted even when smaller income categories were taken into account.

While this relationship between economic status of the family and the type of educational institution runs throughout the educational career and is much more pronounced at the school level, admission at the university stage is based on merit. Moreover, the tuition fees are uniform and fixed by the university and expenses involved are the same in all colleges. On the other hand, school admissions need not always be based on merit and tuition fees may differ from school to school. The Education Commission (India, 1966) noted, "The best schools, which ensure upper class children a head start, are expensive at all levels. The cost of textbooks and other supplies is also inhibitive, the cost increasing at every level of education. The cost to the family economy in terms of lost opportunities to participate in work also rises with the age of the student and the level of education" (1966: 112 ff).

Schools fall into three broad categories. First, there are the English medium schools which are patterned on the English public schools of the pre-independence days and continue to closely imitate their model even today (Myrdal, 1968: 1706). These schools are known for inculcating a high degree of sophistication and what Zweig said of British schoolboys is equally true of students from these schools. "What was, in my view, important and interesting was to ascertain which of the students came from famous public schools. ...One could immediately notice the polish of these boys, their greater self-confidence, their characteristic manner of speech and dress...and their wider interest in the arts and public affairs. Generally speaking, they displayed a greater degree of sophistication..." (1964: 10). There is a premium attached to English in India and educating a child in an English medium school is considered a matter of prestige. Moreover, the English medium school, with its personal supervision and consequently higher academic standards, often makes it possible for these children to get into better colleges and universities and, later on, perhaps ensure better jobs as well. Most of these schools charge high tuition fees. Attendance in these schools is naturally restricted and only families with a sufficiently high economic position can afford to send their children to them (Myrdal, 1968: 1707).

differences in the quality of education imparted in them, the educational institutions have come to fulfil the sociological function of differentiating the upper strata of society from the rest of the population.

Question of Relevance

Even if educational opportunity remains restricted in terms of social and economic position, the question of relevance would be important in a discussion of higher education of women. Education is not an end in itself, but relates to the social and political goals of the society. It must, therefore, enjoy some social relevance. If, on the other hand, it were found that education currently being imparted does not have any direct relevance to the lives of the women, the value of education would remain questionable. Moreover, the restriction of education would remain insignificant, because if education is really irrelevant it is as well that it should be restricted only to those who can afford that luxury.

There are two ways of looking at the question of relevance of higher education among women. One can examine the question of relevance on how far it is related to certain national goals and contributes to their fulfilment. One can, for instance, view it in terms of its role in manpower and human resource formation in the economic or occupational sense in which economists have looked at education and considered its relevance (Philips, 1970: 20-22). Or, one can examine how far education is directly linked to the social or other roles that are likely to be assigned to these women, contributes to their ability to fulfil them effectively and efficiently, and makes them aware of the uses of education. The criterion of relevance in the first case centres on considerations of the utilization of education toward national goals. The second criterion consists in making women more proficient in the performance of their potential social roles that society may expect them to play or the educated women may themselves adopt for themselves.

The criterion of relevance usually employed in discussion of education of women, as of all education, is the former. Education experts and planners look upon education as a means of mobilization of an increasingly large body of manpower for the development of the country. According to this view, the educa-

The differences in the school backgrounds of these students are closely interlocked with their social backgrounds or with the educational, occupational and income level of their families. For example, of the 48 English medium schoolgirls, parents of as many as fortytwo (87.5 per cent) have received high education and fortyone (84.3 per cent) pursue 'high' occupations. On the other hand, of the 38 girls from government schools, parents of seven (18.4 per cent) are highly educated, and twentyfive (65.8 per cent) are daughters of persons engaged in medium occupations.

To summarize it is clear that the constitutional goal of democratization of education has remained largely unfulfilled. Higher education among women has remained, and continues to remain, the monopoly of girls coming from higher social and economic classes. Those from the lowest stratum who have been able to take advantage of the expansion of educational opportunities in independent India are handicapped by other constraints that are directly a reflection of their social and economic status. Thus, as the Education Commission (1964-66) rightly recognized, "The lower class home environment is not conducive to educational progress... As a factor in school success, the difference in the home environment of the very few well-to-do and 'educated' families and that of the enormous number of lower-class families is tremendous; it is far greater than in the advanced countries. Even if all the schools were excellent, there would still be serious problems of inducing the children to enter school, to remain in school, and to succeed" (1966: 112 ff).

· Educational opportunities are not merely restricted in terms of accessibility. It also manifests itself in access to the type and quality of education. Educational institutions are distinguishable in terms of their quality and content, and the type of educational institution differentiates the girls according to the type of institution. These distinctions are not only manifested at the college level, but are continued at all levels of education. Students from lower class background start off in the poorest institutions. When they finish schooling, they either do not enter college at all, or are able to go to colleges whose standards and academic reputation are not always enviable. In short, inequalities in education run through all the stages, and differentiate the students from one class to another. Earlier, education was the sole differentiating factor of status. Given the separation of schools and colleges and the

husband's death or desertion. Most parents feel that the girls extended affinal kin are unlikely to extend support and protection to her now in the event of a misfortune. Consequently, they want that their daughters should be able to acquire at least a certain amount of education that may enable a girl to support herself and her children, if any, in times of necessity.

A second consideration in the parents' decision to educate their daughters is the link between education and marital prospects. Over the years, the requirements of boys about the qualifications of their potential marital partners have been undergoing change. Most boys now wish to marry girls who at least possess a university degree. Careful scanning of the matrimonial columns in the newspapers suggest that university education is increasingly coming to constitute a basic requirement for potential brides. Under the circumstances, many parents are willing to send their daughters to college, though they are not convinced of the value of education in career terms. They merely view it as a means of improving the girls' marriage prospects.

Moreover, higher education also becomes an instrument of filling in the gap between schooling and marriage. Over the years, the marriageable age for girls, particularly in urban centres, has been rising. There is a certain interval between the time a girl finishes her schooling and the time when she is married off. Happily, college education fills in this gap, and many parents send their daughters for higher education during the interim period. This rising age is a natural corollary of the desire of the boys to be independent economically at the time of marriage.

Lastly, education at college has come to be viewed as a symbol of social status. There is a great deal of value attached to the mere possession of a degree. What is the content of that degree is of less consequence and relevance than the degree itself. It is assumed that a person who has a degree possesses certain social graces as well as enhanced social status. In other words, the primary function of college education according to these girls is certification rather than education, and girls go to a college because they seek the label of education more than to receive education (Jencks and Riesman, 1968: 61-64).⁶

⁶ Cf. Jencks and Riesman (1968: 61). Elaborating this point about American education, Jencks and Riesman write, "Virtually every college course culminates in an examination and a . . . degree. A college that

tion of women would be regarded as relevant if the women are eventually available for mobilization for economic development, employment, and to the extent that women are entering the employment market the investment and expansion of educational facilities would be regarded as relevant. The criterion of relevance technically looks upon education as a material investment and takes the view that this is the primary consideration in determining the question of relevance. Some educational analysts have taken the position that the emphasis upon education for occupation and education for education varies with the stages of development of society (Philips, 1970: 22). According to them, the task of human resource formation is the most important for a developing society, whereas education for the sake of education, though an asset in development, can be no substitute for the former. It may be all right to delimit the aim of relevance of education to human resource formation in the case of men because they play a different kind of role in society than women. It would be unrealistic to apply it to the case of women. As we shall subsequently see, the majority of the women do not enter the employment market on account either of their personal volition or certain social and cultural constraints. Yet, this does not mean that education cannot have any direct relevance for them. Even as housewives and mothers they play a useful role in society. Education may, thus, be made directly relevant to their roles as housewives and mothers. If education is able to make women better equipped for these roles, the large investments in education may be amply justified and rewarded. It is our contention that education is directly relevant even from this point of view, and we shall suggest some steps toward the creation of more relevant curricula for women's higher education. Let us, first, examine what attracts the girls to higher education and whether they or their parents see any relevance.

Several factors seem to be operating in favour of women receiving higher education at present. First, education is viewed by parents as a means of social security in contemporary society. They feel that in the context of social changes and the growing nuclearization of family ties, the significance of family and kin groups as sources of social security is becoming greatly minimized. Earlier a girl was entitled to support and protection from her close affinal kin in the event of misfortune befalling her in the form of

upon such subjects in front of others. So even when waiting to be married, they are reluctant to admit it.

Nearly 31.1 per cent students say that they have joined college because they are interested in higher studies, and 19.8 per cent relate their response to career objectives. With regard to the first response, it is difficult to accept the data at face value. It is undeniable that some students are clearly interested in higher studies, but the figure of 31.1 per cent is misleading. Subsequent probing of these students reveals that many of them are using interest in higher studies as a rationalization for their being in college. As indicated already, a certain prestige is attached in contemporary Indian society to the education of women. Although 'learning to move in society' and 'having a good time' may be the implicit purpose of quite a few students, they are certainly not prepared to admit it. Most of them are reluctant to admit that their motives for joining college are not academic. They accept college education as something which has to be undertaken and which serves to absolve them of responsibilities at home. To most of them it is an extension of their adolescence and helps postpone the responsibilities of housekeeping.

There is, nevertheless, a small minority of women who have joined college with the specific aim of following a career. In Indian society the pursuit of a career by women is still not considered particularly respectable. On the one hand, most parents are unwilling to encourage their daughters to pursue a career although they would not object to their doing so after they are married.⁷ Therefore, it cannot be stated with much certainty that all those who showed an inclination to work will necessarily do so. It is more likely that many of them will settle down as full-time housewives in conformity with social expectations. However, these girls reflect an awareness of academic objectives and the advantages offered by higher educational achievements.

The relative diffuseness of career objectives is evinced by the students' perception of future plans. The large number of students, or 44.1 per cent to be exact, stated that they would like to pursue further studies, while 10.2 per cent said that they would like to settle down, and another 7.5 per cent had no clear-cut plans for

⁷ Most parents argue that the question of work after marriage by their daughters would depend largely upon the views of their husbands and parents-in-law, and would no longer be their direct concern.

Thus, the number of parents who send their daughters to college on account of the rising level of educational preparation in society (See Karve, 1966: 105-10) is still extremely small. In a majority of cases more pragmatic considerations influence the parental attitude to education. Not only the parents, the girls too do not relate their education to career objectives or, as Drucker (1959) called it, to productive investment. In response to the query about the reasons for enrolling for the B.A. degree course, as many as 33 per cent students indicated that they had no special reason for joining the course. In fact the need for finding some satisfactory explanation for joining college had never occurred to most of them. They had taken it as a matter of fact, and were ostensibly surprised that such a question should be raised at all. A student's reaction was typical. She remarked "Why I joined college? That's a funny question. I joined college because everyone else does the same." Another said, "It was taken for granted that I would join college after completing my school education."

While 33.3 per cent women students have no clear objective for joining college, there are others whose reasons for pursuing college education have nothing to do with academic pursuits. 5.3 per cent have joined college because the parents asked them to do so, while 1.7 per cent admitted that they were waiting to be married. If students in these three categories are grouped together, it is seen that in the case of as many as 40.3 per cent women students there is no clear objective or academic reason for joining college; they have joined it either because they are interested in keeping themselves engaged in something or because it was considered natural for them to do so. It is quite likely that these students would have pursued any other suitable options if such options were available to them. Moreover, very few girls admit that they are actually waiting to be married. Marriage is a subject which is not discussed openly. First, because in most cases in the Indian social context it is not a matter of their choice or convenience. Secondly, because they are brought up in such an atmosphere where they are not encouraged to express themselves

does not sort and label its students in this way evidently cannot find a clientele.... A 'college' that does not offer any instruction, on the other hand, can still find a market for its degrees, and a substantial number of these diploma mills do in fact exist."

women in their families. While the number of women with graduate or higher degrees will continue to remain small for quite some time to come, there is every indication that it will continue to increase as economic development enables an increasing number of women to pursue college education. Educated women today, therefore, are the vanguard of a growing rank of highly educated women which will characterize Indian society in the future.

Secondly, our discussion has shown that education is not viewed either by the women themselves or by their parents as a productive investment. Very few women have clear objectives regarding employment and fewer still are planning to enter the employment market after completion of their education. Even those who are presently inclined to pursue careers may find their options greatly limited by the social constraints under which a girl's decision to pursue an independent career or to engage in gainful employment must be made. It follows, therefore, that education of women in Indian society is valued not so much as a productive investment but for social considerations issuing from other social changes in society.

Drucker (1959, 114-25) has drawn a distinction between education as a productive investment and as a consumption luxury. As a luxury it centres around a conception of education as a social symbol capable of either promoting the life-chances of an individual in a social sense, or of conferring a social status arising from the possession of that education rather than as a means toward avenues of upward mobility. On the other hand, the conception of education as a productive investment centres around the notion that education is not so much an end in itself, or a social symbol, but a basic form of training required to equip the individual for the role that he may find himself playing in society and the economy. If we accept this distinction as heuristically relevant, it follows that the education of Indian women is still a consumption luxury and has yet to emerge as a productive investment.

Some further remarks may serve to clarify this point. Education as it is understood today was introduced into India by the British to serve their colonial aims and objectives. The British needed a large body of educated personnel to man the lower rungs of the administrative machinery, and they drew up an educational system that would meet this requirement. Thus, as Macaulay has so boldly admitted, the aim of the educational system in India

the future. But a detailed discussion revealed that further studies was not a considered response, and it was not necessary that they wanted to study further toward a definite goal. A great many of them implied that they would study further so long as they were not married. Thus, marriage was the immediate objective of many of these girls, and they viewed studies as the only feasible alternative until they settled down in marriage. Of course, they were not able to foresee when they would be married, or how long their educative process will continue, since the arrangement of their marriage was dependent upon factors beyond their control and it was their parents who were eventually to decide their future course of life. Because of these factors, their future plans were based on a contingency, and they would study so long as marriage was not settled.

Employment statistics show that an increasing number of women are now entering the employment market. However, this should not suggest that work has become a socially accepted alternative for women in all strata of Indian society, or that the women necessarily see vocationalism as an objective of their education. While going in for higher education, the majority of women are not necessarily aware of the broadened options open to them in terms of vocationalism. Some of them may enter the employment market if they are still unmarried and their educative process has terminated. Quite frequently, these women will show a considerable drop-out rate in their employment career. On the other hand, others take to employment as their husbands may themselves wish them to work either because of economic necessity or as a means of employing themselves fruitfully. (In all latter cases, particular occupations tend to be favoured). Only a small number of girls see employment as a means of self-fulfilment.

Need for Reform

The foregoing discussion of women's higher education leads us to two principal conclusions. First, it has shown that the expansion of higher education has failed to benefit all strata of Indian society. It has benefitted only a small segment of the population belonging to the socially and economically better-off classes. But even those who have been able to take advantage of this expansion constitute the first generation of highly educated

them. It is, however, doubtful if the kind of education to which most of the girls are exposed today fulfils even this limited social purpose.

There has been some awareness among educational planners and policy-makers of the wastage⁸ involved in women's higher education in India, but no concrete steps have so far been taken to reorient it to the requirements of the girls or to make it directly relevant to their potential social roles. However, two lines of thinking are clearly discernible. On the one hand, it has been argued that courses in home science should be introduced for women so that education becomes relevant to their social roles. On the other hand the other point of view is that separate professional institutions should be opened so that girls are attracted to them and the rush to colleges and universities is thereby reduced. Although we do not yet possess any assessment of both these steps, the available evidence seems to indicate that they are unlikely to become very popular as alternatives to the present structures of education curricula.⁹ If students are exposed exclusively or largely to home sciences it would limit their options. Yet in terms of career and employment, as we have seen, there is a small minority of women who do pursue education with career objectives in mind. Moreover, several women may like later to enter employment either after fulfilling their domestic responsibilities or in response to economic constraints. At the same time, creation of professional institutions would pre-empt their chances of acquiring a university degree. Such a degree, however, has a symbolic value and is valued for its own sake. Consequently, emphasizing home

⁸ In the context of education, the term 'wastage' has usually been used in terms of drop-out and repetition (see, for instance, Baimar and Pauli, 1971 : 24-27). I use the term 'wastage' in this paper in a more general sense to refer to wastage of resources in education arising from failure of education to become relevant for the individual.

⁹ In addition to the already existing Women's Polytechnic and Institute of Home Economics, the University of Delhi recently started a professional college. These institutions attract girls from particular backgrounds. Rarely are students who normally go to liberal arts and science colleges attracted to them. It seems highly unlikely that the majority of students studying at present in the colleges see the professional college and the polytechnic as an alternative to college education. For most of them, 'where they study' is also significant, and they do not accord the same status to studying at a professional college as they do to studying at a liberal arts college.

was "to create a class who could act as interpreters between us and the millions whom we govern; a class of persons Indian in blood and colour, but English in taste, in opinion, in morals, and in intellect." (See Spear, 1940: 116).

When India achieved independence, the educational system that they had created was retained and expanded to meet the enlarged manpower requirements of the country. Moreover, when educational opportunities were extended to women in increasing numbers, they were required to take to the same curricula and no attempts were made to design curricula that would relate education to their requirements.

There is no doubt that some girls make curricular choices in terms of a deepening awareness of increased potentialities and possibilities for employment. We have ourselves shown that some of the women in colleges and universities are not only aware of current vocational options, but even see their education as a preparation for them. Education of the type that is imparted in our colleges and universities today may be directly relevant to them, though some educational experts are inclined to question even the assertion that the present system of education equips a person for a vocation. But our analysis has shown, and other data suggest, that a very large majority of girls do not view their undergraduate education as a step towards preparation for a career. For most of them, education at college serves as a means of acquiring a social symbol of prestige, a suitable pastime until they are married, or an avenue for raising their marital prospects. Of course, the earlier and a more intense preoccupation of this group of girls with marriage clearly implies that their immediate future planning is geared to their roles as housewives.

The present system of education and the curricula offered do not distinguish between "careerists" and those whose long-term goal is geared to family and home-making. One of the obvious consequences of this failure is that teaching of curricula that are unlikely to become relevant in their lives results in a tremendous wastage of resources. It neither equips them for the future roles that they are most likely to take after marriage nor even makes them aware of the general uses of education. Even if the curricula made them generally aware of their social and cultural environment and made them aware of the intrinsic value of education, it could be claimed that education has some relevance for

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science subjects and creating professional institutions are unlikely to prove feasible alternatives to the wastage in current education of women.

Perhaps, a more feasible approach to this problem would be to increase the range of curricular choices within the existing institutions. This approach offers many advantages. First, it will take care of the reluctance on the part of girls to go, and of their parents to send their daughters, to professional schools. It will also continue to allow them to get a regular university degree with a substantial modification of its content. Secondly, it would keep options open for those girls who might be oriented towards a career as they would be able to pursue all types of courses.¹⁰ Thirdly, this would allow an integrated general education to be imparted so that if a girl wishes to enter a career subsequently she would not be put to a distinct disadvantage on account of a highly specialized training. Lastly, the cost of expanding and reorienting the curricula would be considerably lower as the existing liberal arts and science institutions already possess the infrastructure for it.

The problem of wastage in education is not limited to liberal arts education. Perhaps it is, equally, or possibly even more, acute in science and other fields. However, we have restricted this discussion to liberal arts education as the data for this analysis was confined to arts graduates. We have also confined ourselves to indicating the broad lines along which the modification and reorientation of the curricula may be undertaken. The precise details of such modification will require a more detailed and comprehensive discussion than was contemplated here. It can, however, be easily worked out once the philosophy and logic that are to govern reorientation are clearly identified.

¹⁰ One of the implications of restricting the choice of courses to home sciences would have the effect of limiting their career choice. Such limitation would hardly accord with the goals of democratization and equality of opportunity. Equality of educational opportunity does not merely mean that the same type of education should be open to everyone, but also that the same options should be open to those who receive education.

secular knowledge and information. It was expected that higher positions in the modern sector of Indian society would be filled by persons who became qualified for them to a large extent by the certified and systematic study of more or less codified bodies of knowledge.

Academic Traditions and Indian Traditions

Except for certain fields of legal and linguistic studies, the bodies of knowledge taught in the universities through their affiliated colleges have all been of exogenous origin; they belonged to traditions which had grown up not in India but outside. The universities have been criticised for the exogenous origin of what they have taught and even more for the conduct of their instruction and research in the English language. The academic profession is itself new in India and its members are criticised for not being the same as their traditional analogue, the *guru*.

In the land of the *guru*, the profession which has taken over his obligations is held in low esteem both by those who practice it and by others. In the numerous efforts to diagnose and prescribe for the ailing Indian universities, the *guru* as a spiritual guide and as a source of solicitude is often invoked as a standard in comparison with which the character of the contemporary Indian academic is regretted. The theme appears incessantly. I cite only a few from innumerable examples. "In pre-British days, the relations between the teacher and the taught were very intimate as they lived together and no time limit was imposed on any particular course of study. Mass lectures were unknown and when they had any doubt or difficulty, they approached a senior student or the professor himself for its solution."³ "In our ancient system of education, there was respect for the teacher as a result of personal contacts between the teacher and the student. . . . Today, due to many factors, the position is different."⁴

³ Sen, Surendranath, *Educational Reforms of Sir Asutosh Mookerjee*, Kirti Mandir Lecture Series No. XI (Baroda: Government Press, 1949), p. 4.

⁴ Doraiswami, M. S. (Vice-Chancellor of Osmania University) in *Indian University Administration: Proceedings of the Vice-Chancellors' Conference on University Administration convened by the Minister of Education and Scientific Research from July 30 to August 1, 1957* (Delhi: Ministry of Education), p. 85.

The Academic Profession in India¹

EDWARD SHILS

All societies with a complex industrial technology, with transportation and communications networks based on it, and with a dense and comprehensive system of administration have an elaborate higher educational system. Some systems developed slowly over hundreds of years before the emergence of modern technology and administration; others have been created in connection with the aspiration towards such a society from an already formed model located in a foreign society or culture.

In India a system of higher education was created from a European model.² It was intended to be a complement of its emerging modern sector which comprised rational or bureaucratic administration, modern forms of litigation and adjudication, technological construction, transportation and communication, the care of health, improvement of agriculture and diffusion of

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¹ In what follows I shall use the terms "academic" or "academic profession" to refer to university and college teachers. "University teachers" will refer to those employed in universities, "college teachers" to those employed in colleges.

² The most comprehensive scholarly account of the transplantation of the model is to be found in Ashby, Eric, and Anderson, Mary, *Universities; British, Indian and African* (London: Weidenfeld and Nicolson, 1966), pp. 47-143.

it cannot flourish if it does not emanate from an *essential* quality of the culture which is contained in language expressed in traditional beliefs and institutions. Indian universities and colleges and those who teach and have taught in them have often been criticised for this departure from the paths indicated by the Indian past. There is great dissatisfaction in India with the structures of higher education formed in accordance with the exogenous model and there is great pressure to change the medium of academic instruction. Both of these are expressions of beliefs which are presented mainly in a negative form.

Of course, if the contemporary Indian higher educational system were more successful simply as a higher educational system, it would probably not be so injurious to Indian self-esteem and would not call forth to such an extent the nationalistic beliefs in the integrity of culture, etc. The failure of Indian universities and colleges to please their constituents is at least in part a result of their failure to conform with the standards which are inherent in modern higher educational systems. The argument that they do not conform with or continue from Indian traditional culture would still persist but it would probably be less frequent and less intense if they conformed more closely with the standards of the effective teaching of advanced modern knowledge and if they themselves contributed more frequently to the advancement of knowledge.

The Indian university and college system has suffered from an incapacity to generate a compelling tradition of intellectual work of its own. In a certain sense, every university system is to some extent alien to the culture in which it operates—it is more differentiated, more critical, more innovative than its envioning culture. It succeeds as an institution of higher education to the extent that it differentiates itself from the envioning cultural traditions and generates its own traditions—institutional, professional and disciplinary—which sustain its efforts in teaching and research. It is to this failure that some of the present weakness of Indian higher education can be attributed.

Burden of Inheritance from a Society with an Alien Centre

There is also another reason why Indian universities and colleges have not been successful. Universities are part of the central institutional system of their society; they are elite institutions. I

It is certainly true that there are very great differences between *gurus* and academics. The *gurus* of the past never did what a modern university teacher is required to do and those who are still functioning are not making any attempt to do this either. The modern academic profession seeks to transmit specialized bodies of knowledge established by systematic research, to add to knowledge by its own research, to prepare young persons to do such research and to qualify them to practice a wide variety of professions which require certified knowledge. *Gurus* supervised the memorization of sacred texts and they sought to exemplify and inculcate wisdom. The teachings of the *gurus* were not subject to continuous renewal and revision by freshly acquired knowledge. One might indeed say that the expectation that academics should be *gurus* helps to make the Indian academic what he is. Articulate Indian public opinion which expresses a somewhat hypocritical admiration for *gurus* shows by the choice of its standard of assessment that it does not care enough for modern science and scholarship to enable the academic to be what he can be. It charges him with failure to take a parental interest in the student and with accepting a salary. It cares for incidentals and byproducts—for a quiet student body, for degrees, for the enhancement of India's reputation internationally and for the production of "qualified manpower"—but it does not care for modern scholarly and scientific knowledge. It respects saintliness—intermittently—and it defers to power, but it does not respect hard and persistent intellectual work and it shows little concern for the conditions under which an academic can be effective. The tasks of academics entail neither the exercise of power nor the practice of saintliness. An atmosphere of opinion which admires these is not likely to contribute to the well-being and fruitfulness of a profession which involves neither of these. This state of opinion which derogates the academic profession helps to confirm itself and it produces no positive results.

All these criticisms which have gained in strength in the present century have been supported by sentiments resistant to the implicit judgment that the indigenous culture and languages and cultural institutions were inadequate to meet the needs born of new developments in Indian society, and by an inarticulated doctrine of the integrity of national culture. According to the latter, whatever is not continuous with the past of a society lacks vitality;

which prevented the Indian academic profession from performing with distinction in its work of research and teaching and which had led it into becoming a "pariah class" rather than a self-confident and equal sector of the centre of Indian society. Then I shall attempt to explore some of the ways in which the segmented structure of the centre of India of the *Raj* blocked the performance of other elite functions by the Indian academic.

Handicaps in the Flow of Talent

Recruitment to the Indian academic profession lay from quite early on under the burden of the reservation of many of the best positions in the best colleges—the "premier" government colleges—for foreigners. The Graded Educational Service and the Indian Educational Service were founded on the conviction that they would require well-educated Europeans to provide the stiffening within those colleges which government had destined for the role of setting an example to the rest of the more nondescript higher educational institutions. As late as 1922, the number of posts held by Indians in the Indian Educational Service only amounted to 162; there were 171 Europeans.⁵

The growing numbers⁶ of non-government colleges were always afflicted with poverty, they paid small salaries⁷ and their ill-paid teachers commanded little respect. It was this way at the end of

⁵ Government of India, *Proceedings in the Department of Education and Health Education*; Education Branch (A-October, 1922), Nos. 1-3.

⁶ In 1857, there were nine non-government colleges out of 27; in 1882, 34 out of 72; in 1901-02, 91 out of 115; in 1962-63, 1,333 out of 1,805; in 1963-64, 1,485 out of 1,983. Cf. Nurullah, Syed, and Naik, J. P., *A History of Education in India (British Period A)* (Bombay: Macmillan & Co., 1951), pp 279, 281, 286; University Grants Commission, *University Development in India: Basic Facts and Figures 1962-63* (New Delhi: University Grants Commission, 1963), p. 17 and *University Development in India: Basic Facts and Figures 1963-1964* (New Delhi: University Grants Commission, 1965), p. 20.

⁷ In six non-government colleges in Calcutta in 1917, the average salary of teachers was Rs. 140 per month; in the *mofussil* in Bengal it was Rs. 131 per month; in second grade colleges, it was Rs. 99 per month. The highest salary of any individual teacher in a private *mofussil* college was Rs. 300 per month, while salaries of Rs. 50 to Rs. 70 were common. *Report of the Calcutta University Commission: 1917-19* (Calcutta: 1919-1920), Vol. I, p. 374 ff.

do not refer to the class composition of the student body but to their functions as sources of personnel for various sectors of the elite, as sources of knowledge necessary for the making and implementation of policy in state economy and society, as sources of high culture and of critical and evaluative opinion. But a university is part of the centre of society in a sense additional to that of performing functions vital to the centre of society such as training, evaluating, informing and so on. The tasks traditionally undertaken by universities have always postulated this participation in the centre of society. Such a relationship to the centre is not contained within written university constitutions but is part of the unwritten culture of university systems. The image of the university which was imported into India carried with it the conception of the university as part of the centre of society.

This is where the Indian universities and colleges have encountered a fundamental obstacle. When these institutions were founded in the nineteenth and twentieth centuries, India was a province of a bureaucratic empire. Indian society was not a society in the sense of being an autonomous, autocephalous social system. It had little or no civic life and much of what it had was oppositional to the alien political and bureaucratic elites. The religious life of Indian society was lived apart from the academic system—the religious elite had no affinity or even relationship to the academic elite. Only towards the end of the period of British rule did the academic system begin to produce a substantial proportion of the bureaucratic elite (*i.e.*, the Indian Civil Service). The political (counter-) elite of India stood in a hostile or at best attenuated relationship to the academic profession.

The Indian academic profession could not perform the various functions which are performed by the academic profession in autonomous and autocephalous societies, that is, in societies which have their own fully developed centres. This was a severe burden on its morale. Still, it might have felt itself to be in some measure part of the centre had it been able to perform in its own institutional sphere at a level sufficiently high to evoke its own self-esteem and that of those abroad whom it esteemed. Had it been an intellectual success, it might have been able to act as part of the centre of Indian society when India became independent. It could not however do so.

In the following section, I shall try to explain the impediments

possibly for Presidency College, Calcutta, I know of no higher educational institution in India where teachers encourage their best pupils to enter the academic profession. In fact many senior members of the academic profession take a very poor view of those who do enter the profession. Repeatedly in interviews, in writing and in oral testimony before government commissions, it is said that "we only get the left-overs or dregs".⁹ This is no new development. Even before the post-independence expansion of the student body in higher education, such judgments were common.¹⁰

Before independence there were few rewarding professional careers for intellectually well-endowed young Indians—the higher levels of government service, medicine and the law were then the main attractions. Now, in addition to these, there are many more opportunities in science and technology and some in large business firms. The great expansion of opportunities for employment in scientific research in India since independence has taken place outside the universities;¹¹ the system of national laboratories, under the sponsorship of the Council of Scientific and Industrial Research, and the Atomic Energy Commission have provided the more remunerative posts and the best facilities for scientists. According to qualified judges, the new academic laboratories have succeeded in attracting the most talented young and middle-aged scientists in the country. Thus at a time when more Indians have been highly trained in science than ever before and when university staffs have grown to about 70,000, the capacity of the universities to attract the best men has probably diminished.

⁹ "... Faculty vacancies are being filled, generally, by craven left-outs from other vocations." Professor B. R. Shenoy, letter to *The Times of India*, 2 November 1967.

¹⁰ The senior academics who presented evidence before the Radhakrishnan Commission in the second half of the forties frequently expressed such opinion.

¹¹ In 1901, according to the census of India, there were 548 scientists. (In 1901, the 548, who included astronomers, meteorologists, botanists, naturalists, metallurgists, etc., must have been mainly in government survey organizations and a substantial proportion must have been British.) In the first half of the 1960s the number of scientists and technologists doing research has been estimated variously between 15,000 and 44,000. (In the 1960s practically all of that uncertain number were Indians.)

the last century and it has remained so up to the present.⁸

Under these circumstances, the profession has had little attractive power. India is a society in which many young men are still guided or directed to particular occupations by the decisions of their elders; I have not encountered one Indian academic who entered on his career under the pressure of the preferences of his elders. Parents encourage their offspring to enter government service, medicine, engineering and law, but not university and college teaching. Those parents who are already highly educated are aware of the lowly estate of the Indian college and university teacher. (Very few academics, for example, are the offspring of members of the Indian Civil Service.) Those who are not educated are only dimly aware of its existence. But they do know about government service and, in so far as their opinion is influential with their offspring, a barrier to the entry of the best into the academic profession is erected or maintained.

Even the academic profession does not encourage its best young men and women pupils to pursue academic careers. There are universities which are famous for encouraging and preparing their best pupils to enter the competitive examinations for the higher civil service—Madras and Allahabad are still the most outstanding in this regard. Occasionally a teacher encourages one of his best pupils to enter on a career of scientific research. But except

⁸ During the second Five Year Plan (1956-61), the University Grants Commission sought to raise the level of remuneration of college teachers. Among the reasons given was that "It was felt that on account of the existing disparity between the salary scales in universities and those in affiliated colleges, it often became difficult to recruit and retain qualified staff." (University Grants Commission, *Report for the Year 1961-62*, p. 25.) The new scales were to be: principal Rs. 600-40-800 per month; heads of departments Rs. 400-25-700 per month; senior lecturers Rs. 300-25-600 per month; lecturers Rs. 200-15-320-25-500 per month; demonstrators/tutors Rs. 150-10-200 per month. The commission undertook to provide 50 per cent of the additional expenditure entailed in raising the scales in men's colleges and 75 per cent of the additional expenditure in women's colleges and would do so for a five-year period, provided that the state government or the governing body of the institutions concerned undertook to provide the remainder and would bear the entire cost after five years. By the year 1963-64, 14,000 teachers in 461 colleges were covered by the scheme. At this time there were 2,111 colleges in India (University Grants Commission, *Report for the Year 1963-64*, p. 17 and p. 24); there were 57,112 teachers in affiliated colleges. (*University Development in India: Basic Facts and Figures 1963-64*, p. 44.)

are unknown except in their immediate environment. There is some mobility of teachers between universities, but there is very little between colleges. Syllabi and examinations being university functions, such changes as are made are usually by college principals and by persons with university appointments rather than by those who are confined to their colleges. The intellectual autonomy and initiative of the great mass of teachers is thus so restricted as to be paralysed in its effects.

I have already indicated that in India the academic sector has a smaller proportion of the total research and development funds than it has in most countries with large university populations. Very little of these funds go to college teachers. Appointment in practically all Indian colleges is a predestination to exclusion from research; it is also, given the prestige of research in the present-day academic profession—in India as well as elsewhere—predestination to the status of an academic "pariah".

An additional and important element in the stratification system in universities is the preponderance of the professor within each department. The great majority of departments in Indian universities have only one professor who is also its permanent head. (The department head has a similar hegemony in colleges.) He assigns tasks to his subordinates, he is the link which connects the department with the university (or college) and the world outside. Initiatives must pass through him; such as they are, they are usually blocked there. Applications for research grants, etc., must have his approval.¹⁶ Heads of departments who vary this

¹⁶ A young Indian statistician, now teaching in the United States, had the following observation to make regarding his relationship to his professor in instruction and research. "I was 21 years of age when I was appointed as a lecturer in ABC University. I work very hard preparing for my classes and in working with students. The curriculum was outdated and I spent many evenings working out a proposal for improving the content and teaching of statistics. When I presented the draft proposal to the head of the department for discussion, he showed no interest in introducing any change either in the curriculum or in the teaching methods.... He made all the decisions pertaining to the department.... The enthusiasm for wanting to do and to improve things began to corrode.... I worked out a very good research proposal on a subject of interest to the Planning Commission. The research section of the Planning Commission returned the proposal saying that they do not entertain research proposals from anyone less than a reader. The head of the department was willing to lend his name if the proposal

Internal Hierarchy as a Handicap to Achievement

For those of high talent who do enter the university system, the situation which confronts them is not conducive to performance of high order or to the morale which is necessary for it. Not only are academic institutions not highly regarded in India, but within the institutional system the pronounced internal stratification of academic life condemns a large part of the profession to inferior academic status. Ever since the University of Calcutta became a teaching as well as an examining and degree-granting institution, there has been a stratification which discriminates between the universities and their affiliated colleges.¹² More than 80 per cent of Indian academics teach in colleges.¹³ The universities have better salary scales than colleges; their conditions of service are better.¹⁴ Their members teach less and they have more opportunity to teach more advanced specialized subjects.¹⁵ They have more security of tenure and there are more grades or ranks to which they can reasonably hope to advance. Except for the principalship, or the headship of a department in a large college, the college teacher has no ladder of advancement once he has reached the upper limit of his scale. Universities, even if not greatly esteemed, are at least nationally known; most colleges

¹² Of the 102,454 university and college teachers in India in 1967-68, 84,998 taught in affiliated colleges. (University Grants Commission, *Report for the Year 1967-68*, pp. 2-3.) The majority of the colleges are private colleges and most of these are regarded internally and externally as inferior institutions. Cf. Desai, I. P., "The Fortunate Few" and "The Miserable Many", *The Journal of University Education*, I, 3 (March, 1963), pp. 211-220.

¹³ They teach about 85 per cent of all the students in Indian institutions of higher education.

¹⁴ In the universities and government colleges teachers enjoy legally guaranteed tenure; in private colleges, they are legally treated as employees in commercial establishments, dismissable at the will of the management committee. In fact, however, convention and usage give them indefinite tenure. Nonetheless many of them feel insecure and at the mercy of the managers who almost always support the principal if there is a disagreement with the teaching staff. The rarity of disagreements is attributed by many teachers to their fear of their superiors.

¹⁵ In 1963-64, they taught more than half of the M.Sc. students and 87 per cent of the Ph.D. students. University Grants Commission, *Report on Standards of University Education* (New Delhi: University Grants Commission, 1965), p. 48.

Grants Commission for bettering their lot, and UGC directives are often accepted with reluctance.

In the same university, the average expenditure on an administrator in the registrar's office force rose by 98 per cent in less than 10 years while that of a faculty member declined by 24 per cent.¹⁷ This is due to promotions much more than new recruitments in the upper administrative cadres. Faculty members were denied comfortable residences. Even when the UGC provided the finance, substandard hutments alone were constructed; and, to add to the injury, even senior academicians were bracketed with clerks and stenographers of administrators in respect to allotment of the hutments.

Laboratories and buildings constructed from public funds may ill suit the needs of faculties. The ubiquitous presence of administrators is felt even when ordering slides, chemicals and other laboratory needs; considerations of "economy" may prevail in taking decisions, not the possible margins of error in experiments. Administrators may be generally relied on to stretch a point against academicians.¹⁷

Thus, within the universities and between the universities and colleges, and within colleges as well as between government and most private colleges, there are profound differences in power and dignity. There is also a steep and discontinuous stratification of colleges. At the top are the "premier" government colleges and a few missionary colleges, then a long drooping tail of mediocre and poor colleges, mainly private but also including missionary colleges and the lesser government colleges. In a minority of colleges, there is a constant menace of disaffiliation because of inability to conform with the minimal requirements of the university with respect to libraries, teaching space and facilities, laboratories, even seating accommodation for students enrolled, and so on. The standards are very undemanding and in fact even the most outrageously defective colleges are very seldom deprived of their affiliation to the university. Nonetheless, those who are employed to teach in them know of their low standing and they believe that some of that low standing rubs off on them personally.

¹⁷ "University Administration: Forgotten Factors", *The Times of India*, 11 October 1967.

pattern and practice informal consultation and the delegation of authority are rare.

Above even the professor stands the administrator. Professor B. R. Shenoy has recently written about this relationship in universities:

The relationship now obtaining between the teacher and the administrator is not one in which the administrator caters to the needs of academicians; it is very much a case of administrators issuing directives to the faculty in academic as well as other matters. They enjoy this topsy-turvy arrangement as much as the faculty resents receiving orders from less qualified people. Resentment leading to conflict between administrators and the faculty is common.

This has produced odd results. Faculty members have to put up with petty humiliations as if they were subordinates. Administrators may reprimand academicians with impunity. They have to accept discriminatory disposal of physical facilities as between themselves and administrators. Postgraduate departments may grow much more slowly than the administrative paraphernalia. Starting on the initial salary of the reader's grade, which his background permitted, the salary of a registrar in a certain university nearly doubled in five years and, including allowances, rose to three times as much in another six years; having just reached his salary ceiling, he is now placed on a higher grade, which, together with fringe benefits, will make him the highest paid official on the campus indeed, not excluding the vice-chancellor. By contrast, even distinguished academicians have had to await the arrival of the University

and the subsequent publication had his name first as the author. The departmental head had made it quite clear that he was neither interested in the research subject nor did he plan to contribute to the research work. The price of getting my research proposal accepted was to accept the departmental head as the senior author." After two years the young man obtained an assistantship in an American university where in due course he obtained a Ph.D. and was appointed to its teaching staff where he still remains.

I owe this information to an unpublished paper "Brain Drain: Uprootedness in Our Time" by Dr. Kamla Chowdhry of the Indian Institute of Management in Ahmedabad. Numerous other cases have been reported by my interviewees over a decade and a half.

State governments have power over the universities through influence over the selection of the vice-chancellor and therewith over the tone and style of the whole university. They also, through the system of state grants, have the vice-chancellor under control. "At every step. . . a university has either to 'go' with the Government or grind down to a halt. Since the second thing cannot happen, sooner or later every university goes with the Government."¹⁹ It is also known that some leading politicians regard senior administrative posts of the university, such as the vice-chancellorship and those in the registry, as suitable objects of patronage. Thus even though the actual substance of what is taught or investigated is left fairly inviolate by politicians, the administrative framework is much exposed to them, and teachers are very aware of this and often feel vulnerable.

The Teacher's Calling and Rewards

The teaching of undergraduates has always been the main business of the Indian academic. This tradition derived from a tradition of undergraduate instruction in the United Kingdom. Even though London University provided the model for the constitution of the Indian university, the powerful Germanic style of scientific and scholarly research that developed there in the latter part of the nineteenth century, particularly in University College, London, was not assimilated with the constitution. The Oxford model, devoted to the "education of young men", took root in India. It was the intention of the founders and rulers of the Indian Educational Service that such a pattern should prevail and thus the tradition of concern with undergraduates and of a disregard for research became established in India. Given the paucity of opportunities for research and the ready availability of the pedagogical tradition, it would seem that the Indian academic should find his best gratification in teaching. Yet teaching in colleges and universities in India does not confer

grants from the University Grants Commission. (This protects them from the intrusiveness of state governments but it does not spare them from most of the other ills of Indian higher educational institutions.)

¹⁹ Singh, Amrik, "Universities and the Government" in Shah, A. B. (ed.), *Higher Education in India* (Bombay: Lalvani Publishing House, 1967), p. 71.

Academic Freedom and Autonomy

Although even the best Indian academic institutions are not fellowships of equals, the relationship between master and servant becomes more visible, more pronounced and more humiliating with descent in the hierarchy. Terms of employment are harsh; there is no protection in most private colleges from arbitrary dismissal, tasks are autocratically assigned and, as already indicated, scales of remuneration are very low as compared with universities or with the best government and missionary colleges. There are moreover no compensations in relations with students or colleagues.

It is appropriate at this point to say something about academic freedom and autonomy as they bear on the Indian academic. Indian universities are legally autonomous corporations and their staffs enjoy the same guarantees of tenure as do their counterparts in Great Britain or in most institutions of the United States. There are very few instances of the removal of academic staff members from their posts on political grounds. Teachers in colleges do not enjoy the same legal guarantees but on the whole they too enjoy a fairly high degree of freedom in the expression of their political attitudes. I myself have encountered since independence only one instance of a dismissal of a qualified teacher which constituted an infringement of academic freedom. This occurred in a Bombay college in the early 1950s; the victim was a well-trained historian who had raised a question as to whether Sankaracharya might not have been a crypto-Buddhist. The dismissal occurred because it was thought that the patrons of the college would take offence and discontinue their largesse to the college.

Nonetheless, Indian college and university teachers do feel themselves to be at the unpredictable and inclement mercy of their private managements and state governments. Some of their anxiety might be a function of the diffuse animosity which most academics in India have towards professional politicians, particularly those of the leading parties. But some of it is based on actual experience of interference by state governments in university affairs.¹⁸

¹⁸ Education in India is, according to the constitution, a "state subject". Only four universities in India are "central universities", i.e., independent of state governments and dependent practically entirely on

compensated by conditions in which a teacher lectures for 15 to 20 hours per week. This is not the universal teaching requirement or practice but it is the load of a considerable majority of the teaching profession in Indian higher education.²¹ It should be emphasised that teaching at the undergraduate level is lecturing, often at dictation speed, to groups of students, which are very small when they contain only 25 or 30. Tutorial sessions have been recommended repeatedly but few institutions make provision for them. Informal consultation by students and teachers is very rare by British or American standards—much criticised though these are today. The social tone which fosters and is fostered by so much lecturing and being lectured to, the distractions of the teacher, the shyness, bewilderment and aggressiveness of students, work against informal intellectual guidance. And where can it take place? In many of the better colleges teachers have only one common room and there are still many where only corridors are available for conversations between colleagues and between teachers and pupils.²²

There are admirable teachers in India—as there were before independence—who study their subjects thoroughly, even though they publish very little, and who take a great personal interest in their pupils. They are, however, rare and they are not exhilarated by their rarity. Even those who believe that they are engaged in a noble calling and who try to live up to their obligations are depressed when they observe the long tail of their profession, the lifelessness of teaching and the dubious practices of Indian colleges and universities and they are oppressed by the indignity to which it condemns their profession.

It cannot be said that most Indian academics are allowed to idle. The majority who teach in colleges not only are required to teach many hours but they often have to seek supplementary sources of income. Despite the efforts of the University Grants Commission to persuade state governments to share with them the

²¹ The teaching burden is much lighter in universities than in colleges. Cf. University Grants Commission, *Report on Standards of University Instruction*, Appendix 18, *Workload of Teachers (Hours per Week)* (New Delhi: University Grants Commission, 1965), pp. 215-219.

²² As recently as 1964, the provision of cubicles for teachers was still regarded as an ideal to be attained.

much satisfaction on those who practise it.²⁰

Student-teacher ratios are high; they are higher in colleges (nearly 18:1 in 1962-63) than in universities but even in the latter about twice as high as they are in British universities. The students are ill prepared for higher studies, their understanding of English, where it is still the medium of undergraduate instruction and even where it is only a "library language", is insufficient. Where there has been a "changeover" to the regional language, the amount of material presented is small and there is little literature available to the students—since they cannot usually read English well enough to cover much ground. In many colleges and universities, an improvised compromise between English and the regional language is employed—the same thing being said in both languages. The students are restless and uninterested.

The restless uninterestedness of students and the half-heartedness of teachers are both dominated by a belief in the inevitable prospectlessness of the graduates' career. From the 1880s onwards, there has been discussion about the poor employment prospects of graduates. As numbers increased—modestly by present standards—pessimism grew. A teacher who thinks that what he teaches has no value to the student to whom it is addressed—because the student either cannot understand it or has no interest in it and because even if he understands and is interested in it he is doomed to a life to which his learning contributes little—such a teacher is not to be expected to have high esteem for his calling. The belief in their own "irrelevance" which one so often encounters and the frequency with which they refer to the inevitable period of unemployment of their graduates are closely connected.

The unforthcomingness of the students can scarcely be

²⁰ In the latter part of the second decade of the present century, to which some critics of the present state of the academic profession look back with admiration, as to a time of demigods, the *Report of the Calcutta University Commission* had this to say: "They are deprived of the chance of kindling the interest of their students, and so winning their allegiance, because every inch of the ground they are to cover is marked out for them, and the students, bent simply on the examinations, are apt to resent any departure from examination coaching." (*Report of the Calcutta University Commission: 1917-19*, Vol. II, p. 370). The teachers referred to were the British members of the Indian Educational Service, teaching at the best colleges and being paid more amply than any other college teachers in India!

vindictiveness of the partisans of the losing side.

Sometimes conflicts about the spoils of academic administration are complicated by the turmoil of national party politics. The penetration of state and national—more often state—politics into the university usually has little to do with issues of substantive public policy. Politicians occasionally seek university office to obtain the power of patronage which enables them to reward and bind to themselves persons whose support they value; sometimes they seek membership on the governing bodies of universities because of the influence such positions permit them to exercise and also because of the increment to their prestige which they think will result. The conflicts among politicians for these offices are not always simply the struggles of individuals for advantage; they are often exacerbated by caste loyalties and rivalries. Whatever the motives of the politicians in the governing bodies they bring into action in the university conflicts which might otherwise be only latent.

The main significance of such intra-university conflicts is that they distract university and college teachers from their professional tasks and responsibilities. It is not only energy and time which are lost but also self-respect, because many of those who become involved do realise despite their aggressive self-righteousness while the battle is at its height, that they are sinning against the holy ghost of academic life and that their actions are unworthy of academic existence. Those who do not become immediately involved, either out of higher principle or timidity, are demoralized too. They cannot, even from a position of detachment, resist the belief that their institution and profession are being degraded and that they themselves are also being degraded by the improprieties of their colleagues.

Research

When the first Indian universities were founded in the middle of the nineteenth century, it was not thought in English-speaking countries that universities should be institutions for the conduct of research. Although marked changes began to occur in the next quarter century in both Britain and the United States, the practice in India continued relatively unchanged. The recruits to the Indian Educational Service were intended to raise the intellectual standard of Indian higher education through teaching

costs of raising and standardizing the salary scale of college teachers, there has thus far been little success. Real incomes of college teachers have actually declined; from 1950-51 to 1965-66 the real incomes of college teachers (at constant prices) fell by 10 per cent.²³ Supplements must be found; private tuition—coaching of uncertain students—has for many years been a much discountenanced but sought after source of income for the more impecunious and less worldly teachers in universities and colleges (especially the latter).²⁴

The writing of "notes" is another of the less agreeable by-products of the ineffectiveness of formal instruction. They contain elucidations of passages of set texts, glossaries of difficult terms and model answers to past examination questions. "Notes" are only a printed form of "tuitions", made available more cheaply and to a wider student public. Both are directed towards examinations and attest to the examination-centredness of students and their uncertainty about the efficacy of the instruction they receive. The teachers' poverty probably contributes to another unseemly feature of Indian academic life, namely, intrigue, particularly over appointments to examinerships, deanships and elections to boards and syndicates.

Conflict

India is not unique in the fact that eagerness to perform these necessary and boring tasks of academic administration gives rise to conflict among competitors; India's uniqueness seems to be rather in the frequency and intensity with which such conflicts occur and the embittering ramification of their effects. Conflicts for ascendancy are taken so seriously that they affect deeply even the peripheral mass of teachers who believe that their future prosperity depends on being on the winner's side. The winners might after all be able to influence appointments to higher grades, administrative posts and examinerships and also to curb the

²³ The real incomes of university teachers rose by 5 per cent in this period. *Report of the Education Commission* (New Delhi : Government of India, 1966), Table 3.1, p. 47.

²⁴ The practice is strenuously disapproved of by educational administrators and reformers but it seems inevitable as long as teachers' incomes are small and students are lacking in self-confidence.

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The main significance of such intra-university conflicts is that they distract university and college teachers from their professional tasks and responsibilities. It is not only energy and time which are lost but also self-respect, because many of those who become involved do realise despite their aggressive self-righteousness while the battle is at its height, that they are sinning against the holy ghost of academic life and that their actions are unworthy of academic existence. Those who do not become immediately involved, either out of higher principle or timidity, are demoralized too. They cannot, even from a position of detachment, resist the belief that their institution and profession are being degraded and that they themselves are also being degraded by the improprieties of their colleagues.

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and administration.²⁵ They came from an Oxford tradition which did not look upon research as an obligation of the academic man—the German orientalists among them were exceptions to this. Poverty, governmental niggardliness and snobbery permitted this tradition to continue, even at a time when the University of Calcutta was the scene of significant changes,²⁶ with professorships created through endowments for the promotion of research, research scholarships, and so on. Other Indian universities were slow to follow the path of Calcutta University but they too began to move in this same direction. Academic opinion about the necessity of research began to change. The Ph.D has become more common—an indication of a somewhat more favourable attitude towards research. Indian students have gone abroad increasingly for postgraduate studies and not primarily for undergraduate work as they once did.

The early decision of the Government of India—probably Jawaharlal Nehru's—to promote scientific and technological research through the national laboratories of the Council of Scientific and Industrial Research and the Department of Atomic Energy rather than through the universities continued this tradition.²⁷ It was indicative of the low esteem in which the academic

²⁵ My knowledge of the Indian Educational Service is drawn largely from the unpublished research of Miss Irene Gilbert.

²⁶ Calcutta University was the first to *teach* a scientific subject; its university department of chemistry was established in 1915. These developments were largely the result of the initiative of Sir Asutosh Mukerjee, then vice-chancellor of Calcutta University. In the praise given to Sir Asutosh for this accomplishment, it is usually forgotten that one of the byproducts of the development of postgraduate studies in the university was the frustration of the plans, initiated by Henry Roscher James, then principal of Presidency College, to develop the latter from a college restricted by the university into a self-governing, non-affiliating university. (*Report of the Calcutta University Commission, 1917-19*, Vol. I, p. 416.) It is a serious question whether India did not lose more by this refusal to allow this important innovation than it gained by the establishment of postgraduate studies in the university. Had James's aspirations been fulfilled, the soul-crushing "academic lockstep" imposed by the affiliating university might have been alleviated.

²⁷ This attitude was not confined to the Government of India. Indian opinion inclined in the same direction. The Indian Association for the Cultivation of Science, which occupies a significant place in the history of Indian science, was established by its Indian sponsors and patrons in Jadavpur entirely outside the academic system. See *Education and*

profession was held by the men who ruled India during the early years of its independence. Even the quite recent decision to establish the Indian Institute of Advanced Studies in Simla—far from the universities and cut off from them by the policy of long-term appointments—is a sign of this indifference to or denigration of the academic profession. What it means, however, is that much of the talent which would be available for training research students and for inspiring college and university staffs is more or less isolated and without influence.²⁸ It leaves the mass of university and college teachers in the situation of “second-class citizens” of the republic of science.

Most Indian university teachers—like many university teachers elsewhere—do little or no research. College teachers do even less.²⁹ They have not been trained to do research—the M.A. and the

National Development: Report of the Education Commission (1964-1966) (New Delhi: Ministry of Education, 1966), Chapter XVI. This chapter was reproduced in slightly abridged form under the title “Indian University Reform IV: Science Education and Research”, in *Minerva*, VI, 1 (Autumn, 1967), pp. 48-80. See especially pp. 66-68 and pp. 74-75.

²⁸ A certain amount of supervision of postgraduate students registered for advanced degrees in universities is done in some of the national laboratories. Cf. Kidwai, A. J., “Collaboration between Universities and Government Laboratories”, *Minerva*, IV, 3 (Spring, 1966), pp. 402-406.

²⁹ “... except in very few colleges, research facilities are totally non-existent”. (*Report on Standards of University Education*, p. 41.) Presidency College, Calcutta, is the only Indian college at which teachers had the opportunity to do and actually did important research. J. C. Bose, P. C. Ray, P. C. Mahalanobis, *et al.*, did much of their important research while at Presidency College. It was a unique exception. A young Indian scientist, recently interviewed in London, accurately portrayed the actual situation when he said: “... [if] you are trying to go back to teaching, which might mean a small pittance and having to teach first-year students upwards, this is a big strain on your work, and you might quite likely not get time to do research. The second class people would be more justified in staying here in a sense, except that there is an equally strong argument, that they should go back if they want to teach; in fact, they are very well qualified to teach. No one in Asia seems to be doing anything towards creating the sort of post in which a man can teach and actively do research and involve his students in research at the same time.... If there was some sort of a scheme by which a man doing research could teach also, I think there would definitely be an improvement.” Kini, Rathnakar, “Self-Exiled Asians in the West”, *The Hindu*, 24 October 1967.

M.Sc. are examination and not research degrees.³⁰ Their colleges have not the equipment to do it. Yet they believe that it is expected of them, and their failure to conform with expectations furthers their distress. Many of those who are interested in research and who have aptitude for it leave their universities or colleges for institutions like the Atomic Energy Commission, the Tata Institute of Fundamental Research, the national laboratories of the Council of Scientific and Industrial Research, the Indian Statistical Institute, the Botanical, Geological or Archaeological surveys of the Government of India. The academic profession thus loses some of its "highly qualified and talented teachers".³¹ Many others go abroad to make their careers.

Nonetheless, despite this diversion of research talent from the Indian universities, a good deal of research is done there. In 1962-63 research was done by perhaps as many as 2,000 out of a very approximate total of 28,160 teachers of scientific and technological subjects.³² The upshot of these figures is that only

³⁰ In 1963-64, there were 2,429 research students in science and technology in India. (*University Development in India: Basic Facts and Figures 1963-64*, p. 51.) If there were 28,000 teachers of scientific subjects and if their average term of service is 30 years there would have to be 930 new teachers at least each year, disregarding a highly probable expansion of teaching staff, associated with expansion of size of student bodies, and losses through death, migration and change of mode of employment. Assuming that a research degree takes three years to complete it can be seen that the output of formally qualified scientists to meet the demand for academic scientific staff will be quantitatively inadequate. When we recall that conditions of service and work in the national and other government laboratories are much more attractive and that the Tata Institute in Bombay has especially great power of intellectual attraction it seems inevitable that the teaching of science in Indian colleges and universities will have to be reinforced by those who have no training in research and whose undergraduate training has for the most part been elementary, if not archaic. Such recruits to the academic staff, beginning below the present level of their subject by world and by Indian standards, naturally feel themselves outside the centres of intellectual activity.

³¹ *Report on Standards of University Education*, p. 44.

³² I have arrived at a figure of 825 authors of scientific papers. The figure of 825 was reached by taking the annual average of authors of papers in 12 natural science fields in 25 universities over the years 1952-62 as presented in Sen, U., Rahman, A., and others, *Scientific Research in Indian Universities* (New Delhi: Survey and Planning of Scientific Research Unit, CSIR, 1965), Table 2, p. 15. The figure 825

a very small proportion of Indian college and university teachers of scientific and technological subjects conduct research at a time when it is constantly stressed that teachers should do so even if only for the quality of their teaching. Most of those who do research, moreover, do it under difficulties. The derogation from which the academic profession suffers in opinion is given more substantial form in the meagreness of financial support for research.

Expenditure on research by academic scientists is estimated to come to Rs 6,000 per annum per scientist. In comparison, research workers employed by the Indian Council for Medical Research are supported to the extent of Rs 16,000 per annum; those

assumes that each author wrote only once during the period in question and was active for only one year during the period covered. This is undoubtedly not the case and 825 is therefore an understatement; on the other hand many of the authors were research students who appeared because they were co-authors. This result is an overstatement of the number of academics doing research. The estimate of 28,160 teachers of scientific and technological subjects is derived from *University Development in India: Basic Facts and Figures 1962-63*, pp. 39-40. The figure of 28,160 is arrived at by adding teachers of scientific subjects and teachers of scientific subjects in professional courses in university departments and university colleges (5,006) to teachers of scientific subjects in affiliated colleges (12,579) and teachers of scientific subjects in professional courses in affiliated colleges (10,575). The figure of 10,575 was derived by extrapolation of the proportion of teachers of scientific subjects in professional courses to the total of teachers of all subjects in professional courses in university departments and university colleges (73 per cent) to the total teachers of professional courses in affiliated colleges (14,486). Dr. Ward Morehouse presents a different calculation of 5,600 authors of research papers and 20,000 teachers of scientific subjects. (Unpublished manuscript, pp. 127-129.) In 1964, a report of the Council of Scientific and Industrial Research estimated that in 1966-67, 4,600 teachers in universities (and colleges) would be doing scientific research. The same report estimated that by 1970-71, 8,000 teachers would be engaged in research. See Zaheer, S. Husain, Rabman, A., and Sen, N., *Investment in Scientific and Technological Research during the Fourth Five Year Plan* (New Delhi: Survey and Planning of Scientific Research Unit, CSIR, 1964), Table 3.1, column 2 (not paginated). These estimates were made in connection with the Fourth Five-Year Plan which was scrapped. Extrapolating backwards and bearing in mind the optimism of the CSIR estimates, I think that Dr. Morehouse's figure is a considerable overstatement. The correct figure probably lies somewhere between Dr. Morehouse's 5,600 and my 825.

supported by the Council of Scientific and Industrial Research are provided with Rs 45,000 per annum and those in the Atomic Energy Commission each have Rs 72,000.³³

The hindrances to effective academic research in India are not only financial. We have already referred to the intra-departmental hierarchies which discourage initiative in research. Poverty as well as discriminatory attitudes towards academic institutions limit financial support to research in academic institutions. But apart from these, the inflexibility and slowness of a huge bureaucratic machine play their parts as well. Applications for foreign exchange to purchase equipment and material move slowly through the labyrinthine ways of the middle bureaucracy and this is especially sorely felt when India still has to import much of its scientific equipment. Even where foreign exchange is not required, bureaucracy interposes itself with dampening influence.³⁴

Much of the research which is carried out is epiphenomenal to world science; most of it appears in Indian scientific journals which are not much noticed outside India, and even in India it is less regarded than foreign science.³⁵

³³ In the United States it is calculated that a scientist requires \$30,000 or between Rs. 180,000 and Rs. 240,000 per annum; in CERN \$85,000 or Rs. 510,000 to Rs. 680,000.

³⁴ A young crystallographer working at one of the universities in Gujarat a few years ago aroused through his work the interest of a colleague working on related problems in a South African university. The Indian scientist needed diamonds to carry his research further and since he could not obtain them from the resources available to him in India, his South African colleague generously sent him some diamonds *gratis* to enable him to get on with his research. The customs in Bombay, as soon as the diamonds arrived there, began to harass the Indian scientist, threatening to bring him into court because he had not obtained permission from the Reserve Bank of India to import the diamonds. The upshot was that the diamonds could not be cleared through customs until one of the governors of the university, well connected in Delhi, made representations at the highest level of the relevant ministry and obtained a clearance for the parcel of diamonds. Unfortunately, many months had elapsed and the young scientist having had enough of the harassment of the Bombay customs had requested that the diamonds be returned to their sender and this had already been done by the time the clearance came through. As a result, the research could not be carried out.

³⁵ Cf. "Classified Distribution of Research Papers in Indian and Foreign Journals", *Scientific Research in Indian Universities*, Appendix I,

Nor is there the consolation available to those Indian academics who do research at their colleges and universities that what they do has the merit of serving the interest of national development. According to a long-prevailing principle, applied or technological research is not to be done in academic institutions. College and university teachers when they do research must do pure research and they must therefore compete with other scientists in a world arena. Very few do so successfully and most do not; their publications are hidden from the world's eye and the product of their efforts is disregarded by a worldwide audience.

There is no compensation in a vigorously critical and understanding Indian audience. Specialized communities of scientists of an all-India scale are few. Intercourse among Indian academics outside their own universities is rudimentary. It is hard for Indian scholars and scientists to travel abroad but travel within India is not much easier. Many of them spend their entire academic life in one place or within a narrow radius. Interregional appointments—a Maharashtrian in Calcutta or a Bengali in Bombay—are rare. It is as if most Cambridge dons came from East Anglia or most members of the Harvard faculty had all their upbringing, education and academic experience in New England. Learned societies are not strong enough to form an intellectual community. Practically every academic subject has now reached such a degree of specialization that except for a few departments in a few subjects, an academic research worker engaged in particular subjects rarely has the advantage of frequent contact with another research worker engaged in a closely related subject. Stimulation is infrequent and so is the embodiment at close proximity of a high and exigent standard.

Nirad Chaudhuri observed not long ago that "even brilliant research workers in history and science (in India) gave up all further work as soon as they had assured a satisfactory career for themselves. Among Indian professors there are very few who

Table 0.1 (not paginated). It may be noted that the scientific staff of the Tata Institute for Fundamental Research (Bombay), which is regarded as the most important centre of scientific research in India, published only 21 of their 107 published papers in one year (1965) in Indian journals. Rangarao, B. V., "Scientific Research in India: An Analysis of Publication", *Journal of Scientific and Industrial Research*, XXVI, 4 (1967), p. 174.

produce new works after their first research thesis."³⁶ Chaudhuri suggests that this decline in productive power is to some extent a function of the "overstrain . . . due to the fact that the (modern) intellectual activities had only very recently been adopted and were in many cases imposed from the outside."³⁷ There might well be considerable substance in this explanation but I would attribute no less importance to the absence of the stimulus of a relatively densely populated intellectual community in most of the fields of contemporary academic research.

Whether this often-noticed decline in intellectual energy is a consequence of the reassertion of a traditional religious anti-empirical attitude or whether it is a surrender to the obstacles in the academic environment is not clear. What is clear is the high frequency of diminished interest in research and even in study of the literature of their subjects reported by many Indian academics. At present India is much concerned about the brain drain—although a decade and a half ago when it was as visible as it is now to an outside observer, it was denied on all sides. There is no doubt that the migration of Indian academics abroad is a reality and, since it involves many hundreds of Indians of high qualification and ability, it must represent an enfeeblement of the teaching and research capacities of the Indian academic profession.³⁸

Civil Life of the Academic Profession

A higher educational system is not exclusively a system of cultural institutions transmitting and advancing knowledge. It is also closely linked with the economic, social and political systems of its society. It depends on the environing society for financial support whether it comes from private endowment, grants from the state or from student fees. Its performance of its internal tasks

³⁶ Chaudhuri, Nirad C., *The Intellectual in India* (New Delhi: Vir Publishing House, 1967), pp. 32-33.

³⁷ *Ibid.*, p. 32.

³⁸ In 1966-67, there were about 1,000 Indians on the regular staffs of universities and colleges in the United States. About one-fourth of them were in the 15 leading universities of the country. It is reasonable to infer that these 250 or so were persons of considerable intellectual quality. CSIR, "Indians holding Faculty Positions in the U.S.A.", *Technical Manpower: Bulletin of the Division for Scientific and Technical Manpower*, X, 7 (July 1968), pp. 1-2.

is affected by the distribution of educational opportunity within society and by the social origins of its students. It trains persons, specifically or generally, for the increasingly wide variety of occupations requiring systematic knowledge for their practice. It forms opinion, legitimatory and critical, with respect to the central institutional system of society. In the minds of those who staff it and of those who exercise power in society—in the economy, religion and polity—it occupies a place as a part of the centre. An effective university system must be an equal among equals in this central institutional system. If it is not and is pushed out to the periphery, it is hampered in its performance of both its cultural—knowledge-transmitting and knowledge-discovering—and civil functions.

The Indian university was formed on models taken from a civil society in which universities could perform both their cultural and civil functions. It was established in a society in which it might have been able to perform its cultural functions, although the handicaps were very great. It was not however able to perform its civil functions, partly because the society in which it was established was not a civil society. A heteronomous, heterocephalous society cannot be a civil society. Even the European members of the Indian Educational Service were kept at a distance from the Indian Civil Service as well as from the leaders of the British and Indian communities; the Indian members not less so. What was true of these peaks of the academic profession in the later part of the nineteenth and the beginning of the twentieth centuries was all the more true of their foothills. (In addition the Indians did not mix outside the college with the European staff members.)

The social gap between the academics and rulers became more pronounced through the decades, as the number of private colleges increased. The latter were distrusted as loci of student agitation; they were also disliked as the manufactories of "educated natives", a class much disliked by officials and by the Anglo-Indian community generally. The dislike of the institutions was extended to dislike of those who manned them.

In the nineteenth century when moderate politics began to appear and even before, college teachers had a considerable part in the reform movements. In Maharashtrian reform movements, Balshastri Jambhekar and Krishna Shastri Chiplunkar, who had

both been college teachers, were leading figures. Later leaders included M. G. Ranade who was acting professor of English in Ferguson College (1868-71), Naoroji Furdoonjee, an assistant professor at Elphinstone, and Dadabhoy Naoroji, who was a professor at the same institution. R. G. Bhandarkar, who later became known as one of the greatest Indian indologists, was an active member of the Prarthana Samaj. By the beginning of the twentieth century, they had practically no successors, although the size of the academic profession had markedly increased.

In the politicization of the educated class in Bengal which began in the last quarter of the nineteenth century,³⁹ the college teacher was conspicuously absent. The Indian Association, started in 1876 and led by the *bhadralok*, was governed by a committee of forty-eight; twenty-six of them were lawyers and eight journalists. There is no reference to any of them as teachers. Sixty-eight per cent of the members of the Indian Association were lawyers.⁴⁰ Dr. Gordon Johnson lists the members of the councils formed after the 1892 councils reform: of fourteen members in the 1893-95, 1895-97 and 1897-99 councils, eleven were lawyers, two were *zamindars* and one, Surendranath Banerjea,⁴¹ was a journalist. Schoolmasters offered themselves for election to municipalities and district boards but not college teachers.⁴²

Students (as well as schoolboys) took an active part in the Swadeshi movement but college teachers did not. In the societies and brotherhoods in which Bengali terrorism was nurtured in the beginning of the twentieth century, secondary school and college students had a large part; so did secondary school teachers. College teachers seem to have abstained.

What was the reason for this gradual separation between academics and politics? In March 1890, the Governor-General in Council declared:

Servants of government have not the same liberty as private

³⁹ Seal, Anil, *The Emergence of Indian Nationalism: Competition and Collaboration in the later Nineteenth Century* (Cambridge University Press, 1968), pp. 194-241.

⁴⁰ *Ibid.*, p. 215.

⁴¹ He was also the founder and principal of Ripon College in Calcutta in 1882.

⁴² Johnson, Gordon, *India Politics 1888-1908*, unpublished manuscript.

individuals and are bound to hold themselves aloof from many movements which are perfectly legitimate in themselves and which private persons are free to promote. Their participation in such movements is open to objection because their connection with them is likely to create and even to be appealed to for the purpose of creating a false impression in the minds of ignorant persons that such movements have the countenance of government, and because their influence with the community at large is liable to be impaired by their identifying themselves with the class by which the movement is promoted. For these reasons...

(1) as a general rule, no officer of government should attend a political meeting where the fact of his presence is likely to be misconstrued or to impair his usefulness as an official; (2) No officer of government may take part in the proceedings of a political meeting or in organising or promoting a political meeting or agitation.⁴³

In 1897, following the murders of the British officials, Rand and Ayerst, in Poona, the Government of Bombay Presidency enunciated the following principle:

... the institution of youth should be wholly dissociated from politics ... as a consequence ... teachers and professors should not take part in political agitation. The observance of this rule must be insisted on, not only in the case of educational institutions under the direct control of government, but in the case of all institutions which receive aid from public funds.⁴⁴

In 1902, Charles Russell, an Oxford graduate who had been recruited to the Indian Educational Service in 1899, organized a conference of teachers in arts colleges to be held on 29 September to discuss the recent Universities Commission Report. On 27 September a notice was circulated to the Presidency College staff

⁴³ "Engagement of Government Officials in Political Agitation", Office of the Director of Public Instruction, Allahabad, File No. X-19 of 1890-91.

⁴⁴ Government of India, "Protection of Higher Education from Dangers with which it is threatened by participation of teachers and pupils in Political Movements", *Proceedings in the Home Department*, Education Branch (A-June, 1907), Nos. 76-79.

stating that in accordance with Home Department Rulings of 1890 and 1898 government servants could not attend meetings to discuss government policy. In a letter of 8 November, 1902, addressed to Lord Curzon, Russell protested against the prohibitory order, denying that the report was government policy; he said that as a result of the prohibition, government educationists could not attend and the conference was a failure.⁴⁵

On 4 May 1907, Sir Herbert Risley, Secretary to the Government of India, addressed the following communication to the Chief Secretaries of the Governments of Bengal, Eastern Bengal and Assam, and Burma:

I am directed to address you on the subject of the principles to be observed and the line of action to be followed with the object of protecting higher education in India from the dangers with which it is threatened by the tendency of both teachers and pupils to associate themselves with political movements and to take a prominent part in organising and carrying out overt acts of political agitation. . . .

A (college) professor is dealing with more advanced and more responsible material than a schoolmaster and it is everywhere recognised that he may claim a larger discretion in respect of the expression of opinion. But he also has his special obligations. If he abuses his position by diverting the minds of his students to political agitation, if he encourages them to attend political meetings or personally conducts them to such meetings, or if while avoiding open propagandism, he adopts a line of action which disturbs and disorganises the life and work of the college at which he is employed and if the governing body of the college fails to check such abuse, then it is clearly the duty of the university to interfere in the interest of the educational efficiency of which it is the constituted guardian. If the university were to refuse to control its affiliated colleges in this respect, it would fail to carry out the educational trust with which the law has invested it and it would be the duty of the government to intervene.⁴⁶

⁴⁵ Government of India, *Proceedings of the Home Department*, Education Branch (A-May, 1903), Nos. 70-71.

⁴⁶ Government of India, *Proceedings of the Home Department*, Education Branch (A-June, 1907), Nos. 332-334.

In 1909, J. A. Cunningham, a member of the Indian Educational Service; teaching at Presidency College, wrote a letter to the well-known liberal journalist S. K. Ratcliffe requesting him to cause a public protest to be made against the action of the Government of Bengal in transporting certain teachers who, the Government thought, had excessive influence on their students. Cunningham wrote that the teachers had in fact a restraining influence on the political dispositions of their pupils and said that the Government's action would "ultimately play into their (the terrorists') hands". For this Cunningham was severely censured since such a proceeding was manifestly inconsistent with the responsibilities attaching to the position of a government servant.⁴⁷

The firm hand of government over the Indian academic, however much it might have elevated the level of instruction in colleges where the Indian Educational Service operated, had a deleterious effect on the academic profession's performance of its civil function. The coming of the Gandhian ascendancy in the Indian political movement was a further barrier. The academic profession was teaching a culture imported from abroad in the face of a political movement which denied the validity of that culture for India. It was serving the purposes of the alien regime through accepting employment in its institutions and through educating young persons who would aspire to employment in other governmental institutions. The academic institutions themselves were alien in inspiration and disjunctive *vis-a-vis* the Indian tradition. The medium of instruction was an alien one. Gandhism set itself against all these.

When the civil disobedience movement urged students to leave their colleges and many students responded, their Indian teachers ordinarily remained at their posts. In many cases they were sympathetic towards students and the national movement but there were practically no instances of resignation by teachers from their academic posts. Academic persons played no part in the Congress Party, perhaps because they feared the heavy hand of the Risley circular, or because they felt ill at ease in the resurgence of traditional Hinduism which was associated with the movement dominated by Gandhi.

To the isolation from civil life—there was really very little in

⁴⁷Government of India, *Proceedings of the Home Department, Education Branch* (A-May, 1909), Nos. 12-16.

imperial India—and from the actuality of oppositional politics, Gandhism added the sense of isolation from India itself. Ever since the renaissance of Hinduism which followed very soon after the short-lived occidentophilia of the first half of the nineteenth century, western culture, despite the universal fascination with it among the educated, had carried with it an overtone of betrayal. The acceptance of modern culture implied departure from the ancestral domain, not territorially but in the realm of the spirit. Gandhian populism, which sought unsuccessfully to avoid an exclusively Hindu idiom, turned to the peasantry and the poor as the true bearers of the Indian essence. Those who espoused and taught western culture were charged with turning away from this Indian essence.

Who in India were the chief embodiments of western culture and thus out of affinity with the Indian essence? Not the lawyers because although they practised in an imported legal system they were among the main actors in the national movement; not the businessmen because they were usually traditional in their domestic life and they financed the national movement; not the middle and lower ranks of the government service since they were generally not much immersed in western culture; not the small number of Indian members of the Indian Civil Service because they were powerful, and power—even hostile power—evoked awe; not even secondary school teachers because they were not so much implicated in western culture. It was the academic profession carrying on its work in the alien language and expounding the alien culture which was the most “cut off” from the Indian essence.

The highly educated Indian college or university teacher had nowhere to turn. There was no civil life in India; oppositional politics were forbidden to him. He was barred from social intercourse with the educated British except for his own colleagues—aside from this there were few highly educated Britons in India except for members of the Indian Civil Service with whom any relationship was practically out of the question for academics. The peasantry too was out of the question; after all who, except civil servants, landlords, moneylenders, craftsmen, small merchants and other peasants associated with peasants anywhere. Nonetheless, the accusation of being “out of touch with the masses” touched a tender spot; and politicians,

even educated politicians, still exploit it.⁴⁸

What I have been describing is the inherited "subjective map" of the position of the academic in Indian public life as it appears by and large to the academic. In actual fact the situation is somewhat different. The gap is not as unbridgeable as the fundamental image has it. The first two presidents of the Republic of India were both former academics. V. K. R. V. Rao, a member of Parliament and former Union cabinet minister, had developed the Delhi School of Economics into the most interesting centre of economic analysis outside western Europe and the United States. Before that he was an academic economist of some merit. Triguna Sen,⁴⁹ whom Rao had succeeded as education minister, was another notable academic turned politician. D. R. Gadgil, a former deputy chairman of the Planning Commission, is one of the most eminent economists and founder of the Gokhale Institute of Economics and Politics in Poona.⁵⁰ From time to time, since independence as well as before, academics, especially economists, are asked to serve on one panel or government commission or another. As consultants to government, Indian academics play a much more restricted role than they do in the United States or Great Britain. Professor P. C. Mahalanobis, who was

⁴⁸ Professor Sher Singh, until recently Minister of State for Education in the Government of India, said in justifying the government's campaign against the use of English as the medium of instruction in higher education: "Our masses have lost all contact with the intelligentsia who are living in an ivory tower." (*Indian Express*, 23 September, 1967.) Academic intellectuals are criticised for excessive cosmopolitanism, with being "content to write in English and to seek appreciation for our work outside India rather than in India". (President Zakir Husain, 23 August 1967). "The collaboration of Indian scholars with foreign scholars is justified only if Indian intellectuals were to convey their knowledge to the Indian people by writing in the Indian languages." (*Times of India*, 24 August 1967.) The theme is incessantly reiterated.

⁴⁹ Dr. Sen did not hesitate to use the conventional politician's criticism of the Indian academic as "being out of touch with the masses" during his ministry. Such criticism from a former academic comes easily, not because it makes sense but because it is so widely shared, at least ambivalently, by so many academics. Cf. my "The Implantation of Universities", *Universities Quarterly*, XXII, 2 (March, 1968), pp. 142-166, especially pp. 142-146.

⁵⁰ Itself significantly enough founded outside the University of Poona, although in the course of time relations became very intimate.

statistical adviser to the Planning Commission and major consultant in matters of economic and science policy during Jawaharlal Nehru's premiership, was an exception. Even in matters of science policy, Indian university scientists play a very modest role. The Ministry of Defence has had two leading academic scientists as its consultants but the Scientific Advisory Committee to the Cabinet with a membership of 15 includes only one active academic scientist—the professor of botany of the University of Madras.

There is very little interchange between the higher civil service and the universities. Academics who leave the academic profession to enter government service ordinarily enter in the intermediate grades. Retired senior civil servants either go into business or if they are academically inclined become associated with non-university research institutions such as the Indian Institute of Public Administration.

Similarly, party politics involve very few academics in the work of the party. In recent years, except for Humayan Kabir, who was once an esteemed teacher of philosophy in the University of Calcutta, no significant Congress Party figure has been a former university or college teacher. In the opposition parties, Hiren Mukerji (Communist Party of India), N. R. Malkani (Jana Sangh) and N. R. Ranga (Swatantra Party) were formerly college teachers. But on the whole, despite their quietly held anti-political and apolitical attitudes, Indian academics have held themselves apart from oppositional party activities nearly as much as from the activities of the long-dominant Congress Party.

This atrophy of the civil organ of the academic profession manifests itself in matters with more immediate academic bearings. I have already referred to the feebleness of the learned and scientific professional societies in India in the purely scholarly and scientific sphere. They are more inert in making pronouncements or representations in matters which involve their expertise or their professional interests.

As individuals, they do not engage in the publicistic activity which is common among academics in Great Britain, Western Germany or the United States. It is seldom that one sees a turn-over article in a leading Indian newspaper on some important current economic or political issue written by an academic. In the intense discussion or dispute about the medium of instruction which had been going on for some years, only teachers of law,

engineering and medicine have expressed themselves in public individually and corporately on the question. The majority of college and university teachers—apart from a group at the University of Delhi—have been surprisingly silent, although many have definite opinions and all are bound to be affected by the outcome, whatever it is. A.B. Shah, who was for many years professor of mathematics in Ferguson College (University of Poona) and who is an outstanding exception to the above proposition about the attrition of civility in the Indian academic profession, has written:

Nor have they proved capable of coming together over issues that demand their judgement unless it were in support of the government. The proceedings of the various learned conferences make as instructive reading in what they omit to discuss as in what they do not. For instance, the All-India Political Science Conference paid little or no attention to the question of the linguistic reorganization of the states; nor did the All-India Economic Conference examine the question of nationalization and democratic socialism until decisions were already taken independently of the academic world.⁵¹

Paradox of Success in Failure

The Indian academic profession has suffered from having been born under three unlucky stars. It was unable to develop vitality as an intellectual community with a variety of overlapping, more specialized intellectual sub-communities because of the poverty of the country, an unfortunately chosen constitutional model and an uncongenial cultural tradition. Coming into existence in a society which was not a civil society, it could not develop a sense of affinity with the other sectors of the elites—alien and Indian—which ruled Indian polity, economy and culture. And being more advanced in the scale on which it was carried on than the economic and social structure of the country, it could not function as an effective training stage for the central and lesser elites of the

⁵¹ Cf. "Public Opinion in Indian Democracy" in Aiyar, S. P., and Srinivasan, R. (eds.), *Studies in Indian Democracy* (Bombay: Allied Publishers, 1965), p. 530. Cf. also [Gorwala, A. D.] "The Public Voice", *Opinion* (Bombay), 31 December 1968, pp. 3-6, for a severe criticism of the civil deficiencies of the Indian Economics Association.

country. These latter two misfortunes accentuated the first. The attrition of civility and superfluity in the performance of its function in the Indian economy has inhibited intellectual ardour and hampered the growth of academic intellectual traditions.

Notwithstanding the above, India today has the most effective democratic polity among all the new states. As an underdeveloped country with a growing modern sector it would not be what it is without the long and ill-rewarded labours of the Indian academic profession. Practically every eminent Indian scientist in the world today—and their number is not inconsiderable—had his start in the Indian higher educational system. Practically all Indian engineers have had much of their training in India. Nearly all the better Indian scholars in history, anthropology, sociology, linguistics and so on have had at least their initial if not all their training in Indian colleges and universities. The same is true of the leading Indian journalists and the most progressive and imaginative of Indian politicians. Their outlook is inconceivable without what they assimilated from their higher education in India.

This is a remarkable accomplishment. One cannot imagine modern India without that accomplishment. It bears witness to the indomitability of the human spirit in India and to the existence of a nurturant tradition with which strong characters could make contact under the debris of historical misfortune. The paradox requires respectful and grateful acknowledgement and further study.

Teachers in Higher Education

SUMA CHITNIS

Those who are concerned with academic standards feel particularly critical of the failure of teachers to maintain high standards. Teachers are blamed for the breakdown of discipline and for a marked decline in the level of scholarship and teaching standards. Many people regard the poor quality of teaching as the principal factor for the sorry state of affairs in which our colleges and universities find themselves.

It is important to examine the legitimacy of this criticism. It is equally or perhaps even more important to examine the structure of the academic organization and to identify the manner in which it makes for this situation. In this paper we have presented some data¹ on teachers and on teaching at three eminent arts and science colleges affiliated to one of the oldest and most prestigious universities in the country, and tried to indicate the manner in which the organizational structure affects the academic situation. The picture we have presented is not representative of all universi-

¹ The data that have been presented are part of the findings of a larger study of the "teacher-role in the college system", undertaken by the author. They are obtained through intensive interviews of 171 teachers belonging to three arts and science colleges affiliated to the University of Bombay in which the study was conducted. Since all the faculty members of each of the three colleges were covered in the course of the study the respondents represent the entire range of age, sex and discipline-wise composition available at these colleges.

ties in the country. Nor for that matter is it strictly representative of the university to which the three colleges belong. The colleges in which the observations were made are among the best in the country and to that extent the picture presented in this paper is likely to be more optimistic than conditions in the country actually warrant. Nevertheless it offers a general clue to the existing situation.

Evidently, college teaching attracts both sexes. Our sample was made up of 113 males and 58 females ranging between twentyfive and sixty years of age. However, the majority (66 per cent) of the teachers interviewed were males; women constituted only 33 per cent of the sample.

The representation of women was particularly poor in the science faculty (19 per cent). They were, however, considerably better represented in the faculty of arts (40 per cent). A breakup of the agewise composition of the sample indicates that 22 per cent of the teachers were less than 30 years old, 38 per cent between 31 and 40, 24 per cent between 41 and 50, and the remaining 16 per cent between 51 and 60 years. In terms of religion the sample was fairly mixed. Although the majority (71 per cent) were Hindus, the other religions in the country were also fairly well represented: Christians 14 per cent, Muslims five per cent and Zoroastrians 10 per cent. It is interesting to note that practically 59 per cent of the Hindu teachers were Brahmins which perhaps shows that the teaching profession continues to attract high caste Hindus. Most teachers (81 per cent) possessed the Master's degree, more specifically an M.A. or M. Sc. About 17 per cent were Ph.Ds. A small two per cent had nothing more than a B.A or B.Sc. Their performance records show that as many as 37 per cent obtained first class either at the graduate or postgraduate degree examination or at both. However, a majority (54 per cent) obtained second class at both examinations. About seven per cent either obtained third class at both examinations or second class at one and third at the other.

As many as 46 per cent of the teachers were alumni of the colleges at which they taught. This suggests that the teaching faculty at colleges is drawn from a narrow circle and that their exposure to and experience of academic cultures is likely to be restricted to that of a single university. This impression is further reinforced by the finding that only 12 per cent of the teachers in the sample

had been to a university outside the country either as students or as visiting teachers.

A majority (64 per cent) of the teachers come from families in which they were the first college-educated generation. Only 36 per cent had college-educated fathers. As may be expected, the percentage of those who had college educated grandfathers was even smaller (20 per cent). A majority were also the first generation to hold what may be considered to be a fairly prestigious white collar occupation. The fathers of 30 per cent were clerks in the government or in private firms. Another 22 per cent were the offspring of farmers or of small businessmen. However 43 per cent mentioned teaching, the administrative or civil service or professions like law and medicine as their fathers' occupation.

The foregoing description provides a clue to the qualities and qualifications of college teachers. It indicates that a majority of teachers had themselves been second class students and had only one postgraduate degree to their credit. It is however difficult to state definitely whether or not teachers may be considered, on the basis of this description, to be adequately or inadequately qualified and to verify the legitimacy of the criticism that college teaching attracts leftovers and rejects in the employment market. In order to do so, it would be necessary to compare teachers with entrants to some of the other occupations. Meanwhile it would be useful to examine the teachers' choice of and commitment to their profession.

Teaching seems to have been the first choice for at least 50 per cent of the teachers interviewed who said that they had never considered joining any other profession. Seventeen per cent mentioned having taken up another job or occupation before coming to teaching; they did so because they had failed to find positions as teachers earlier. On the other hand only 13 per cent had wanted to follow an occupation other than teaching. They seemed to have come to teaching because they had been unable to qualify for occupations of their choice. A majority of them seemed deeply attached to their profession and to the college at which they taught. An overwhelming majority (68 per cent) said they would not like to change their job or profession if they were given an opportunity. As many as 60 per cent admitted to being strongly attached to their institution. Another 31 per cent, although

not so strongly attached, seemed fully satisfied with working conditions at these colleges. Although these factors are positive indicators to the teachers' attachment to their profession, nevertheless, it is necessary to probe further and to inquire into the nature of their involvement in it.

Teachers as Academics

The academic involvement of the teachers may, among other factors, be gauged in terms of their reading habits and productivity as scholars. A large majority (84 per cent) of the respondents did not do any regular reading to equip themselves for the courses they taught. Only 16 per cent of the 171 teachers interviewed mentioned regular reading and study directed at equipping themselves in their field of specialization. The percentage of teachers who utilized vacation for study was even smaller—only 9 per cent. Indeed, 91 per cent of them admitted that they did not utilize their vacation for purpose of study.

As many as 34 per cent had written no professional article, paper or books. In another 5 per cent cases their Ph.D. dissertations were the only writing they had done. Of the remaining 61 per cent, only 25 per cent claimed to have written professional articles or books. The other 26 per cent confined themselves to writing light journalistic articles, book reviews, or translating the textbooks from English into the regional language.

Asked to describe the manner in which they spent their leisure hours, the teachers listed a variety of activities. Academic activities like organizing lectures and talks were mentioned by 40 per cent, social and welfare activities by 31 per cent, music and painting by 22 per cent and light reading and writing by 17 per cent. Direction of or acting in plays, learning languages, sports, political work and business were other activities mentioned. As many as 32 per cent of the teachers admitted that they undertook private tuition or coaching classes during leisure hours.

All this suggests that teachers are not particularly active or productive as scholars. Those who are unfamiliar with the organization of college education in the country would be inclined to rate teachers poorly on that account. But if we examine the situation in which they function, this apparent shortcoming reveals a significant pattern.

Fresh graduates are accepted as teachers of undergraduate

colleges. They are not required to produce evidence of research or publication in their field of specialization. Subsequently, after their entry into the profession, the teachers' upward mobility on the academic ladder is determined almost exclusively on the basis of seniority in terms of years of service. Scholarship in the form of research and publications is not recognized as a precondition to promotion. In fact, rules regarding promotion of teachers are so rigidly framed in favour of seniority that scholarship and academic productivity generally go completely unrewarded. Furthermore, the character of teaching required of them does not encourage scholarship or academic activity either. They are not required to conduct discussions or dialogues with their students. Teaching is almost exclusively organized in the form of lectures delivered to large groups of students. These lectures are expected to cover specific topics within a given syllabus which often remains unchanged over a period of several years. This makes it possible for teachers to use, year after year, the notes prepared at the outset of their career. The teachers' own admissions in this respect strengthen the viewpoint that the level of undergraduate education and the manner in which instruction is organized make for stagnation of teachers. Seventy-two per cent out of the 171 teachers interviewed for this study said it was not necessary to read much in order to teach at the first year and the Intermediate level. Forty-eight per cent thought it was not necessary to read even for teaching at the senior B.A. or B.Sc. level.

Teachers as Pedagogues

Since the system does not require teachers to function actively as academics it would be important to see what it expects of them as pedagogues. As pedagogues they are required to deliver lectures and conduct tutorials and practicals. In order to understand their function as lecturers and as supervisors for practicals and tutorials it would be useful to describe briefly the manner in which teaching is organized.

Typically, a lecture is of forty or fifty minutes' duration during which teachers deliver a discourse on a prescribed topic. The entire course is covered through a series of lectures. For a maximum utilization of lecture rooms and teaching personnel, colleges find it necessary to group students into large classes. They also find it necessary to allocate a fixed number of lectures for each

course. Large classes inhibit the development of rapport necessary for free discussion, and the stringent budgeting of time makes it difficult for a teacher to allow for interventions and digressions essential for the purpose. Discussion is also inhibited by the fact that many students are not genuinely interested in their course. Most of them enrol at colleges only for the certificate to be obtained at the end of the course. Besides, the students' lack of proficiency in English inhibits them to a large extent, especially those who come from schools where medium of instruction is other than English. As such most of the students are inarticulate and ill-equipped, because of their school background, to participate in discussions. Thus, on the whole, the system does not allow for much interaction between students and teachers.

Lectures are supplemented by practicals for science and tutorials for arts students. Practicals are laboratory sessions in which science students perform experiments under the close supervision of demonstrators and teachers. A tutorial is of 40 to 50 minutes' duration in which a teacher is expected to involve a small group of students (not more than 25 at a time) in discussion of a theme or topic related to subjects covered during the lectures. Practicals are provided at all levels, from first year to the level of graduation. Tutorials are generally restricted to the last two years of the four-year college course.

Topics for the tutorials are to be decided upon mutually by the teacher and students concerned. Students are expected to prepare for the tutorial discussions by doing some extra reading. Ideally all, or at least some, are required to prepare written assignments. The teacher is expected to stimulate and guide the discussion and students are expected to participate actively. In practice, however, tutorials are either turned into additional lectures to complete the syllabus or converted into preparatory classes for university examinations. This happens because teachers are hard pressed for time to cover the syllabus and the students' own participation in discussions is usually poor.

The system does not provide any other avenues of academic interaction between teachers and students. Seminars, group discussions, supervised assignments involving library work, and other mechanisms for instruction are not much used for instruction in the undergraduate arts and science colleges covered by this study.

How, one may ask, do teachers interact with their students in the course of lectures and tutorials? What is the level at which they teach? How do they operate their lectures and tutorial sessions?

Our findings indicate that interaction between teachers and students during lectures is extremely limited. Although 93 out of 171 teachers interviewed (52 per cent) mentioned interaction in the form of questions and answers, only twentytwo or 13 per cent teachers mentioned questions initiated by students. This indicates that although it is common practice for teachers themselves to pose questions during lectures it is uncommon for students to do so on their own. Even more illustrative of the quality of interaction in the classroom is the finding that practically all the 93 teachers who mentioned interaction stated that it was invariably the same three or four students who repeatedly asked or answered questions.

The contention about the limited nature of interaction is further supported by the fact that although 52 per cent of the interviewed did feel that it existed, as many as 48 per cent expressed the opposite opinion. In fact they stated that the expression on their students' faces and their general tone of attention in the class were the only clues to the students' comprehension.

As already stated, covering the prescribed syllabus is the minimum that is expected from teachers. But they are free to go beyond these minimal requirements and to add to the content of instruction. There is, however, a major constraint: the nature of student evaluation. Students are not evaluated by their teachers. Nor is it a continued process of the assessment of the work done by them throughout the year. Examinations are conducted not by the colleges at which students study but by external examiners appointed by the university to which colleges are affiliated. This is done by means of an annual examination in the course of which students are required to write, within fixed time, answers to questions framed on the basis of a syllabus and text prescribed by the university.

The character of the examination makes it necessary for students to equip themselves in such a manner that at the end of the year they are able to reproduce in the examination hall whatever they have memorized, not learnt. This distinction is important and requires to be stressed. Students are not particularly interested

in extending their horizons. They look up to their teachers to material they can use for their examination. Most teachers, in turn, try to provide the material in the form of 'notes' which are memorized by students in preparation for their examination. Often these notes are used in lieu of textbooks. The dependence on classroom notes is so ingrained in the system of college education in India that teachers are known to organize their lectures in a manner that facilitates the taking of notes. In fact, sometimes lectures are practically dictations. What is probably even more important is that the dictations are often consciously designed to provide students with material they can use for their examinations. The consequences of this situation are reflected in the following observations.

Asked to describe the approach they adopt in the course of their lectures some teachers stated that they confine themselves to covering syllabi and simplifying texts. Others said they go beyond minimal requirements and provide students with some additional information. Some teachers, however, said that they cover the text, provide additional information and try further to lead their students on to analytical and critical insights into the subjects.

It is interesting to note that the approach that teachers adopt varies according to the stage at which they teach. The undergraduate course spans a period of four years: the first year, the intermediate year, the junior year and the senior year. Most teachers confine themselves to a basic covering of texts at the first year and the intermediate level. It is only at the junior and senior levels that several teachers try to encourage a critical and analytical approach to studies. The detailed breakup of the teachers' statements regarding their approach to teaching indicates that 151 first year and inter level teachers were evenly divided between those who merely simplify texts and cover syllabi (32 per cent), those who also try to provide additional information (37 per cent), and those who make efforts to lead students to analytical and critical insights (31 per cent). The division among the 158 junior/senior level teachers appeared to be different: fortytwo of them (27 per cent) said they provide students with additional information, and twentyseven (18 per cent) said they concentrate on the texts. But the majority (51 per cent) said they try to stimulate the students' analytical and critical abilities. A majority (58 per cent) of the 171 respondents admitted to dictating notes regularly or to delivering

college should be matters of serious concern. The fact that our findings relate to teaching at colleges which may be considered norm-setters in one of the major universities in the country helps to underline the gravity of the situation. Yet, how far are teachers to blame for the situation observed. We have reason to believe that the indifferent reading habits of teachers and their poor productivity as scholars is related to the fact that the system does not offer any rewards for academic activity. Again there is no doubt that the quality of teaching is determined to some extent by the enormous expansion that has taken place in recent years. If lectures take on the character of discourses and public lectures, it is primarily because classes are large, the time available for the completion of each course is limited, students are heavily examination-oriented, and the ability to accumulate information and to learn by rote are qualities that are better rewarded than the capacity to probe into a subject with understanding and depth. Yet large classes, a stringent apportioning of teaching time and a mechanical structuring of examinations are in fact the principal mechanisms by means of which the university has made it possible to provide college education for such large numbers.

To say that expansion and the organizational structure of higher education are largely responsible for these limitations, is not to absolve teachers of their responsibility for the maintenance of standards. Much depends on the dynamism and conviction with which teachers uphold standards and launch innovations. Even more depends upon the effectiveness with which they are able to communicate their zeal for academic excellence to their students. Teachers who are indifferent scholars and who have very little interaction with their students are not likely to provide the inner strength and dynamism that universities require for sustenance and growth. The quality of the scholarship of teachers is a measure by which we may gauge the academic quality of a university and the quality of the interest shown by teachers in academic standards is a measure by which we may estimate the possibilities of the development of that university. But in order that teachers function effectively it is necessary that the academic organization provide conditions that are conducive to encouraging scholarship and dynamism on their part.

Our study indicates that an overwhelming majority of the teachers interviewed are enthusiastic in the choice of teaching as

to maintain regular records of the students' performances, it would be unrealistic to expect them to be informed about the progress of individual students over the course of the year.

Continued Supervision

The study further revealed that 31 per cent of first year and intermediate level teachers were not at all able to keep note of the progress of their students, and an almost equal number (31 per cent) were only able to keep track of their best students or of those who were singularly poor at their work. However, as many as 30 per cent of the teachers at this level were able to follow the progress of their students. The number of those who were able to do so in respect of the junior and senior level students is larger—64 per cent.

That teachers are better able to follow the progress of students at the junior and senior stages may be due to the fact that they are required to meet these students in small batches for tutorials. Moreover, whereas the first two years of the undergraduate course consist of certain basic courses, the junior and senior years are meant for specialization. Teachers are likely to be in a better position to follow the progress of those who have chosen to specialize in the subjects they teach. The fact that classes are comparatively smaller at the junior and senior levels and that teachers have already had two years to get acquainted with the students who have reached the junior level are other factors that probably contribute to greater interaction between teachers and students at this level. However, although teachers are able to maintain better personal contacts with their junior and senior students than with their first year and intermediate students, it is doubtful whether even these contacts can be considered to be satisfactory at all. This is especially so when we take into account the fact that the system does not provide for contacts between the students, the teachers and faculty advisers and counsellors.

Implications

Our findings indicate that teaching at undergraduate arts and science colleges does not proceed at an advanced level. It also shows that interaction between teachers and students is extremely limited. On the whole, both the limited productivity of teachers as academics and the quality of teaching at the undergraduate

Part Five

Language

an occupation. It also shows the majority to be highly committed to the profession as well as strongly attached to the colleges at which they teach. If they function poorly as academics and somewhat indifferently as teachers, could it not be because the structure of college education reduces teachers to mere "lecturers," which in fact is the designation by which teachers are appointed and recognized.

English in Indian Education

MANINDRA K. VERMA

The question of the place of English in Indian education is naturally related to the question of the place of English in Indian polity. Any confusion in the latter is bound to be reflected in the former. Ideally, what language or languages a university or school decides to teach is its own concern (or, at the most, the concern of its governing bodies), to be determined by such considerations as the fulfilment of basic educational needs, the wider interests of its students, richness and variety in the curricula, and perhaps also the availability of funds and personnel. But when a language is sought to be made part of an educational system not only as a compulsory subject of study but also the medium of instruction at some or all levels, for some or all courses, one needs to take a very serious look at the question. One needs to do so because it implies an investment of time, energy, and resources that can be of awesome proportions in any country but particularly so in the case of a populous country like India. It, then, becomes a matter of national policy or, at least, something to be pursued in varied manners by different institutions *within* the framework of a national policy. It also becomes very relevant to determine what the role of the language in the life of the nation is, what is expected to be accomplished through its use, and what its official status is. It is only through this kind of relevance that political decisions and educational policies, which ideally should

national pride and national identity go, but not so convincing as far as national unity is concerned, especially when there is first-hand experience to the contrary. National unity is made up of a number of things of which a single common language may be one (just like religion) but not necessarily so. India is by no means the only example of a multilingual nation being subjected to the necessity of instituting more than one official language. Belgium, Canada, Finland, and Switzerland are good examples of nations with more than one official language. In fact, India is more fortunate than the nations mentioned above, where there is full equality of two official languages (three in case of Switzerland). India has English only as an "associate" official language. A possible objection to English because it is not an indigenous Indian language is irrelevant because this is the language that almost all Indians agree upon especially those who, for whatever reason, find a second language necessary. It has been there in that capacity for a long time and, for the reasons of logistics, can be allowed to continue until such time as it meets its natural death in that capacity. It is also a fortunate situation for India that it has only two official languages. Because two somehow seems to be the optimal number for a non-monolingual administration to be a workable proposition, as the actual facts in the case of Switzerland exemplify.² Thus, while having more than one official language may not be the most ideal situation for a nation, it is not a particularly distressing one, either. Besides, every nation has to contend with its special circumstances and find a workable solution. India's multilingualism and its history have created a place and usefulness for English in India, at least for the present.

The above is by no means a plea to entrench English further as a language of administration. The social and administrative ills of operating in a language beyond the comprehension of the populace are well known. It becomes liturgical in nature and similarly an instrument of blackmail in the hands of many. So, ideally, it should eventually be eliminated, or at least replaced by another Indian language (if a second official language continues to be necessary). Except for the considerations of logistics, English, a foreign language, should not be necessary for the internal administration of India. Any (non-native) Indian

² See Heinz Kloss, "Types of Multilingual Communities", *International Journal of American Linguistics*, 33.4. p. 7 for a discussion of this.

be kept apart, have become related to the question of English in India.

Unfortunately, the debate on this question has been characterized, and therefore vitiated, by general ignorance on the part of most governmental and educational policymakers about the nature of language and language dynamics in general and English *vis-a-vis* Indian languages in particular. There is a general lack of understanding about such matters as the communicative roles of a language at different levels, what makes a language a 'link' language, the optimal number of "official" languages that any nation has been known to use in fact (as opposed to theory), the role of a "medium of instruction" and its problems, varieties of bilingualism (or, more accurately, non-monolingualism), and a host of other related questions. The folkloristic attitudes of the people, as well as policymakers, about these matters show up in completely uninformed claims, pro or con, about such things as the efficiency of English versus Indian languages on the one hand, and Hindi versus other Indian languages on the other, the developed or undeveloped state of some languages and the desirability of allowing a "hatching" period for them, the question of national pride, national identity, and national unity associated with the selection of an official language, the ease of learning a particular language as against all others (the favourable claim is very often 'made for English'), etc.

The purpose of this article is not to discuss the question of the official language policies. However, the official language question and the question of language in education are inextricably mixed up. A proper understanding of some of the considerations are equally relevant to both of them, because national needs have to be provided for in the educational planning for languages.

There is a generally accepted feeling, about which somehow the supporters of Hindi are more vociferous, that India as an independent nation must have one—and only one—of its indigenous languages as the "official" language of the Union. This is generally argued for in the interest of national pride, national identity, and national unity. The argument is basically correct as far as

¹ A letter to the editor that appeared in a Delhi newspaper in 1968 claimed that English is obviously an easier language to learn than Malayalam because English has only 26 letters to its alphabet as opposed to about 50 of Malayalam's.

administrative situations) as an effective means of communication with all kinds of desired nuances. The question of the present logistics aside, an Indian official or link or contact language will have an advantage over English in India on both counts. First, they share more with each other in their systems of linguistic and semantic structures than they do with English, and second, they participate in a more or less common system of the ethnography of communication.⁴ As a result, both effective learning and effective use of an Indian language will be faster and easier for an average Indian. It is sometimes quite a pitiable sight to find two Indians struggling to communicate with each other in a language in which none of them really feels comfortable.

The point sometimes made about the creation of administrative elites (disregarding the question of intellectual elites for the moment) through the use of English⁵ is pure nonsense and hardly deserves any consideration. Curiously enough, support for English in administrative work comes from people whose own control of English is very questionable. Office clerks and slightly higher secretariat workers as a group are great supporters of English and love to point out how convenient and satisfying it is to operate in English. Their satisfaction, of course, has the psychology of distinction in not using a common man's language, but it is the convenience of typing out from letters and making formula notes on the files, which will be just as convenient in any language once the form is mastered. Since they have neither the opportunity nor the motivation (not to speak of tradition) for doing much creative administration, they would never find out their own limitations in using English for new things to say or new ways of responding to an administrative problem. When officers in the upper echelons (or even educators and professional men) find it difficult to operate in any language other than English, they are indirectly commenting on their personal limitations. They just have not been trained to operate in any other language for those specific purposes. They cannot and, may be, should not be expected to learn a new medium of expression for professional

⁴ Refer to Dell Hymes, "Toward Ethnographies of Communication", *American Anthropologist*, 66.6, 1964, pp. 1-34 for the implications of this concept.

⁵ For example, as emphasized by A. B. Shah and R. Bhaskaran in their articles in A. B. Shah, ed., *The Great Debate*, 1968.

language is much easier for an Indian to learn and be effective in than English. An opinion to the contrary is likely to be held only by a person who has no idea of the structures of Indian languages (and their similarities, even across the separate Indo-Aryan and Dravidian language families³) on the one hand, and the structure of English, on the other. Most teachers of English in India know from their experience how frustrating a task a truly effective control of English can be (for their students as well as themselves); linguistics analyses, of course, can provide ample explanatory evidence.

It can also mean a saving in national resources in many ways. For one thing, the cost and logistics of training literally an army of efficient Indian teachers of English for all levels are staggering. This will be necessary if we want to use English in any meaningful way and certainly if its use as a medium of instruction has to be more than the kind of farce it currently is, where even teachers, not to speak of students, cannot control it effectively. Besides, the extent of English an average Indian learns in ten years of schooling can be matched by about three or four years of schooling in any Indian language without any change in teaching methodology. By improving instruction plans and classroom methodology, corresponding reduction can be effected, of course, in both cases. Without going into the linguistic details of this question, it may be pointed out briefly that a language is an extremely complex system. Equally complex is the system of its use (written or spoken, in various kinds of social, political, and

³ The fact that the structures of Indian languages (both Aryan and Dravidian) are very similar to one another was brought out quite significantly in the discussions at a conference on the "Universals in Indian Grammar" held at the University of California, Berkeley, in August 1970, which was attended by many American and Indian linguists including the present writer.

But also note the following comment by Gleason (*Linguistics and English Grammar*, 1965, p. 408) in another context:

"On another occasion, I taught linguistic field methods to a class of north Indian students, all speakers of Indo-European languages. We used as an informant a speaker of a Dravidian language from the south. Repeatedly I found myself having difficulty with syntactic points that seemed completely obvious to the students. So much of a pan-Indian syntax has seeped into every language of the country (including even the unwritten language of a minor hill people) that there is little strange to one Indian in another's speech."

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deliberate language planning—Hebrew in Israel and Gaelic in Ireland. Hebrew in spite of being a dead language for over 1,500 years was deliberately revived to become the language of an officially monolingual nation. As a dead language, it could hardly be the vehicle of modern thought, science, and technology in the sense that most supporters of English in India argue for English. It nevertheless succeeded in becoming the actively used language of an extremely progressive and modern nation (which is none the worse for it) because the language ecology was in its favour. The Irish, on the other hand, did not succeed because the language ecology of Ireland was unfavourable to its success.

: The ecological situation for Hindi is extremely favourable to make it the lingua franca of India which it is and has earned it the right to be the official language of India; but not favourable enough yet to let it be the sole official language, to the complete exclusion of English. There may be some who would like to take issue on the lingua franca characterization of Hindi. It is amazing, though, how the same people would be willing to call English, quite validly, the lingua franca of the world (in spite of the fact that it is used either as a first or second language by a very small minority of the world population in absolute terms) but unwilling to accord that status to Hindi which has roughly the same role in India as a general purpose contact language over widely distributed areas and is "the fourth most spoken language of the world."⁸ Hindi is obviously the link language—a role which can admit of further strengthening but hardly a contender—for the populace but not yet a link language for the professions or academia. In this connection, it may be pertinent to point out that a language becomes a link language entirely because of the accidents of history and the social and political factors involved in them and never because of its greatness as a language whatever that may mean. English as a link language of the world is a good example. One could never convince a Frenchman or a German, quite understandably, that his language is in any way inferior to English (in fact, most native speakers of English themselves have an attitude of admiration for French as a language representing elegance and distinction). It is simply an accident of history that the Mughal rulers adopted a language for their use which in the

⁸ Vladimir Miltner, 1969, p. 55.

purposes at a late stage in their careers. But one thing should be clear: their difficulty is neither an endorsement of the suitability of English nor an evidence of the unsuitability of an Indian language.

In any case, it is clear that we need English as an associate official language, definitely for some time to come. The real justification for the choice, however, should be clear so that fanciful arguments for or against a language are not raised. The supporters of "Hindi as the only official language *now*" are simply unaware of the enormity of the problem and various factors, especially the time involved, in creating a new kind of effective bilingualism. And though there is no reason to question their sense of nationhood, one may very well question their understanding of it. In fact, one can even question their understanding of what love for Hindi ought to mean. As V. V. John has put it, "Hindi's replacing English as the idiom of the bureaucrat is not the highest felicity that its lovers can bring about."⁶ This is not an entirely new phenomenon, however. Language has a habit of becoming a symbol of entity for a new nation and thereby making it somewhat self-conscious. The dominant motivation in the demand of the supporters of Hindi for eliminating English completely as an associate official language is the fear that the indigenous official language will not get its rightful place as long as English continues. There may be some substance to it but not much. For one thing, much depends on what place Hindi occupies in the general life of the nation.

II

While conscious language planning and official support can go a long way in instituting or strengthening certain roles for a language, there is yet another dimension to this question which is equally important. It may be called "language ecology".⁷ Language ecology may be roughly described as the complex of socio-linguistic phenomena that will allow the continuation or institutionalization, or even cause the death, of a language in a community or nation. There are two very good examples in recent history of a language becoming a symbol and thereby part of

⁶ V. V. John, "On Not Learning English" in Shah, *op. cit.*, p. 84.

⁷ As far as I know this term was first used by Einar Hagen in a talk at the University of Wisconsin, Madison, in 1971.

activities which are not entirely academic and which concern the common man but should desirably have an all-India currency (such as, medical prescriptions, engineering blueprints, and the like). But the more academic aspects of the professions which may in a way be called "the meeting of the minds" do present a thorny problem. For example, participating in conferences, keeping oneself acquainted with the all-India literature in a field, and—the more commonly cited one—the mobility of scholars and so on. They are also, of necessity, related to the pattern of language use in education. There, however, English will be an indispensable tool in this regard, though not necessarily to the complete exclusion of an Indian link language as discussed above. In a sense, the question of link language is only an extension of the question of official language, and a dual language policy with profitable determination of their respective roles is about the best solution.

The above, however, is not an affirmation of the simple-minded claim of many professionals and the so-called intellectuals that Indian languages are not developed enough to take on the task of intellectual activity in the country. It is simply a matter of the logistics of the present situation plus the consideration that academically English is a necessity in Indian education. Therefore, it is inevitable that it will be available as a tool of scholarly contact and there is no reason to consider it desirable to limit its advantages or our flexibility by excluding it. At the same time, we have to understand clearly why we need to retain English so that we know how to define the roles it can play most usefully without undermining weightier considerations,¹¹ and how much of national investment to make in it. For example, the so-called underdeveloped state of Indian languages is not a valid reason for the retention of English in any aspect of national life. In order to determine the place of English in our education intelligently and to make possible a meaningful consideration of our options, it seems extremely urgent to clear the air of some of the myths that have tended to cloud our thinking. Some of the popular notions that invariably come in any discussion of the language policy need to be evaluated in the light of known facts about language in general and English *vis-à-vis* Indian languages in particular.

¹¹ Many people seem to feel that just as the English king can do no wrong, the English language can do no wrong, either.

form of Hindi-Urdu spread far and wide. The people of Bihar whose languages are genetically related to Bengali have been users of Hindi for a long time.

Similarly, arguments for or against according a language the status of a link or official language for the reasons of its past history and the richness of its literature are beside the point. A language emerges as a link language when it is increasingly found that the purpose of contact is served better through it. English in relation to other European languages is, again, a good example. In accordance with the arguments of the detractors, Greek should be the link language today because of its past history and literature. A link language emerges simply as a result of various non-linguistic factors and lasts in that role until the same kind of non-linguistic factors promote another language over it; otherwise Sanskrit, with all its greatness, should have stayed with us as the link language of India. English itself succeeded French as a link language in the Western world and acquired its present strength in that role only because of the strong involvement in world politics and trade of two English-speaking nations (U.K. and U.S.A.) successively, and hardly because people all over the world were dying to read English poetry. If anything, they were dying to buy and sell merchandise and make more money in which they happened to find English internationally helpful.⁹ It is entirely conceivable that English may not continue to occupy this position for all time to come for no fault of the English language and in spite of all the richness of its literature, as happened in the case of French.

The question of a link language for the professions and educational activities is slightly different. Suspending for the moment the question of the ability of an Indian language to shoulder the responsibilities of a link language for 'higher' purposes, there is no reason why the "popular" link language cannot be made use of also for some of the professions, such as law, which are essentially "India-defined"¹⁰ and for at least those professional

⁹ It is entirely for this reason that Madras makes Hindi films and most Indian singers also sing in Hindi to be commercially successful.

¹⁰ I am aware of the objection that may be raised to this characterization of the profession of law (as in "An Interview with Mr. Chagla", Shah, *op. cit.*, p. 130). However, the non-essentiality of translation and the pattern of language use as proposed here should meet the objection.

find them necessary in their work. Such terms will naturally be in the language of the researcher, and fellow researchers in other languages will simply have to borrow them for those new concepts rather than wait for their own language to devise them. This leads to heavy inter-borrowing of technical terms between languages. The word 'sputnik' was created not in English but in Russian and English has simply borrowed it. In fact, most of the technical vocabulary of English, for which English is excessively esteemed by some Indians, is not English at all. It is really of Greek and Latin origin. But no one thinks of abandoning English or branding it 'poor' as a language of scientific discourse. There is no reason why an Indian language cannot similarly fulfil the task of technical discourse with the help of borrowed words along with its own resources. After all, technical terminology is only part of the total use of the language in this regard and its lack at best a temporary superficial nuisance rather than a substantive insurmountable limitation. But, maybe, it is not only not extremely necessary but also not very desirable to create esoteric sets of native scientific vocabulary; it may be better to use the same basic sets as done across the languages in Europe with phonological reshaping. Lack of such a vocabulary, then, ceases to be a meaningful limitation if the desirability of the adoption of a language is strongly indicated on other grounds. At any rate, in the case of conscious language planning, there is need for adopting all these devices: borrowing, coinage, and active language use rather than its postponement.

Languages have very intricate systems capable of infinite variety and range. Specialized vocabularies are a very small part of their communicative function, and they are very quick to rise to the task of performing whatever roles they are assigned. Presence of great creative literature has nothing to do with their being developed enough to perform different roles. Absence of published scholarly materials will make a language a poor source language but not a poor language to communicate in or conduct business in for various purposes if the specially required technical terms are devised or borrowed. In short, there is nothing lacking in the system of communication of that language to make it basically unfit. It will be foolish, for example, to brand English as crude and undeveloped because it cannot discuss some of the sophisticated concepts of Indian philosophy and religion without

III

It is common knowledge among linguists that every language is inherently a perfectly adequate instrument for all forms of activity—social, cultural, political, and educational. There is no such thing as a language more suited, by its very nature, to science and technology, and another, say, to music. So it cannot be said that a language by its very nature is incapable of handling a particular kind of discourse or providing a particular kind of education. One may, however, find it desirable also to learn a second or third language for ready access to certain kinds of information available in them. Thus it would be foolish, for example, to argue that an Indian language cannot be a suitable medium of instruction for certain branches of knowledge. This decision will have to take some other factors into account. On the other hand, knowledge of English may be very desirable for access to the source materials in it.

In the evaluation of the suitability of languages, a lot of emphasis is put on the availability of technical terms, though. But, as P. B. Pandit has pointed out, "All languages have technical terms."¹² For example, 'chalan', 'bandh', 'gherao', etc. are as technical as they come, and in fact so technical that English has had to borrow them. A language may, nevertheless, lack certain kinds of technical vocabulary for various reasons but never because of its inherent linguistic poverty, because every language has also a built-in mechanism for creating new words as the need arises. A large part of the technical terms in a language, however, are really words of very common use given precise and restricted notions in certain kinds of discourse. "Words like 'energy', 'mass', 'particle', 'force' in English are common words"¹³ which assume technical meanings in scientific discourse. If a language is not used for certain kinds of discourse, its words will not assume technical significance in those discourses. Therefore, it is really put it all before the horse to say that a language ought to develop technical vocabulary first, join the ranks of 'developed' languages, and then be a candidate for medium of instruction.

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¹² P. B. Pandit, "The Logistics of Language Development" in Shah, *op. cit.*, p. 130

¹³ *Ibid.*, p. 130

find them necessary in their work. Such terms will naturally be in the language of the researcher, and fellow researchers in other languages will simply have to borrow them for those new concepts rather than wait for their own language to devise them. This leads to heavy inter-borrowing of technical terms between languages. The word 'sputnik' was created not in English but in Russian and English has simply borrowed it. In fact, most of the technical vocabulary of English, for which English is excessively esteemed by some Indians, is not English at all. It is really of Greek and Latin origin. But no one thinks of abandoning English or branding it 'poor' as a language of scientific discourse. There is no reason why an Indian language cannot similarly fulfil the task of technical discourse with the help of borrowed words along with its own resources. After all, technical terminology is only part of the total use of the language in this regard and its lack at best a temporary superficial nuisance rather than a substantive insurmountable limitation. But, maybe, it is not only not extremely necessary but also not very desirable to create esoteric sets of native scientific vocabulary; it may be better to use the same basic sets as done across the languages in Europe with phonological reshaping. Lack of such a vocabulary, then, ceases to be a meaningful limitation if the desirability of the adoption of a language is strongly indicated on other grounds. At any rate, in the case of conscious language planning, there is need for adopting all these devices: borrowing, coinage, and active language use rather than its postponement.

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recourse to words from Sanskrit which has technical terms for them, or because English had to borrow the concept and the term 'sandhi' from Sanskrit for technical linguistic discussions of even non-Indian languages. In that sense, English is the most mongrel of all languages and, if this has any meaning, so 'poor' that the constitution of the U.S.A. will cease to exist if all the French and Latin words were to be withdrawn from its English.¹⁴

A popular notion about language characterizes it as an 'organism', as has been done, for example, by John V. Ferreira in his article "English versus Indian Languages—An Anthropologists View."¹⁵ The idea is that a language is born and then it grows up to attain maturity. Since Ferreira has chosen to take a scholarly stance in adding the explanatory note to the title, one is forced to point out that as an anthropologist he ought to know better. It is a simplistic notion. A language is *not* like an organism which one can plant and wait for it to grow or develop in course of time before it can be used. Similes in scholarly discussions are misleading, but if one has to use one in this regard, then may be languages can be likened to muscles which grow and gain strength with use. All languages come fully equipped with whatever it is that languages are made of. What Ferreira refers to as "slow" and "imperceptible" growth is not growth but change. And his example of English starting its growth in 900

¹⁴ On the basis of various studies (e.g., Keot, 1933; Roberts, 1965) the following estimates can be made about English. Even if only 20,000 words of common use were to be taken into account, only 20% of them will be native English words. Latin and French will account for about 60% of its total vocabulary. Any scholarly writing in English is almost impossible without using 45% French words and 15% Latin words. Apart from earlier borrowings which include such common words as 'chair, table, fork, plate,' etc., there are such indispensable modern words as 'captain, colonel, attack, harricade, campaign, commandant, march, massacre, speculation, communication, operation, preliminary,' etc. Legal and administrative terminology is all French: 'court, defendant, suit, summon, session, attorney, accuse, crime, felony, traitor, property, damage, privilege, plead, plaintiff, judge, jury, bail, lease, perjury, parliament, nation, minister, power, sovereign, government, council, authority, chancellor, prison', etc.

If this is the state of affairs for English, then according to the popular view, it does not deserve any status.

¹⁵ John V. Ferreira, "English versus Indian Languages" in Shah, *op. cit.*, p. 37.

A.D. as Old English is particularly bad. For one thing, it started earlier; only, the available records do not go beyond that (incidentally, the date for that, too, should be 700 A.D.). But if the intention is to argue that English started its growth early and has had time to mature *vis-a-vis* Indian languages, then this argument is patently wrong. For one thing, the relationship between Old English and Modern English is precisely what it is between the modern Indian (Aryan) languages and their ancestor Prakrits, which would antedate Old English by about a thousand years. Even the Apabhram̐sas, which are like Middle English to English, would antedate Old English and certainly Middle English. But more relevantly, all modern Indian (Aryan) languages started their career around 1000 A.D., which is earlier than the date for the beginning of Modern English given by Ferreira, namely, 1550 A.D. Even just in terms of available texts, we have *Jñanesvari* in Marathi completed in 1290, a Gujarati book on Sanskrit grammar dated 1394, and the earliest records of the language complex Urdu-Hindi dated around 1400 A.D.¹⁶ All these antedate Modern English. The fact that the name Hindi was not always used for the different stages of this language does not mean that the language simply started the day it got its name. It will be like arguing that the Hindu religion did not exist until the Moslems came and gave it its present name. But even on that score an Indian language like Tamil is ahead of English because the Tamil language has been known as Tamil since roughly the second century A.D. If the impression sought to be created here is that there has been an unbroken line of development as a language in the case of English from the very early times, then that is wrong, too. Apart from the fact that English changed its character in regard to its words in a major way at a relatively late date,¹⁷ what is generally referred to as Old English is not the direct ancestor of Modern English. Old English belongs to the West Saxon branch of the language complex called English, whereas Modern English is a development from the Mercian branch which came into its own as a language of any significance only around Chaucer's time (around late fourteenth century). What is recognizable as Modern English with any direct bearing on the English as used today in phonology, syntax, and usage, is a

¹⁶ See J. Bloch, 1965, p. 24.

¹⁷ See footnote 14.

phenomenon whose origin is around 1800.¹⁸ Disregarding all that an average student of Hindi studies in a Hindi course, even if we were to accept 1850 quoted by Frank Anthony¹⁹ as the date for the beginning of 'Khari Boli' Hindi—the Hindi as spoken today—one must say, it would compare extremely well with English. The English that we are interested in and fighting about is even less than two hundred years old, like Hindi.

The point of all this is simply that such arguments to support English (or run down an Indian language) are absolutely irrelevant, and English would be better off without such supporters. In this article, Ferreira also uses technical terms, such as, "lexico-statistics" and "drift" giving a seemingly scholarly flavour to his arguments. Unfortunately, all these terms are misinterpreted, if not misrepresented, in the context of language growth. It is unfortunate when such misleading views are propagated by people whose scholarly background might create undeserving credibility. It is a classic example of the (otherwise desirable) support of English for the wrong reasons.

IV

Arguments are also raised about "standardization" in language in a manner which can be very misleading. Many, like Frank Anthony, try to argue that, unlike English, a language like Hindi has no norms. He says, "Even in the Hindi states today, Hindi differs from one area to another."²⁰ If such an argument were to be taken seriously, English will have to give up not only its claim to be a possible link language in India but even its right to be the national language of the U.K. or the U.S.A. By the same token, the community of Anglo-Indians that he leads and which likes to claim English as its mother tongue will have to find some other name for the language it uses (Will 'Indish' do?), because even though it is supposed to be modelled after the standard Southern British, it certainly is not the same.²¹

¹⁸ Every sophisticated book on the historical development of the English language treats this point significantly.

¹⁹ F. Anthony, "English versus Hindi" in Shah, *op. cit.*, p. 39.

²⁰ *Ibid.*

²¹ See John Spencer's study (1965, "The Anglo-Indians and Their Speech"). Some of the observations: Anglo-Indians have a

The upshot of all this is that decisions about the roles of English and Hindi and other Indian languages in the life and education of the nation are not to be made on the imagined greatness of English as a language on the one hand and the imagined lowliness of the Indian languages on the other, because almost everything that can be said against the nature of Indian languages can be applied with equal, or even more, justification to English. Besides, we just do not need these arguments to marshal support for English because English has enough valid arguments in its favour to recommend itself as a very necessary language for India. We must, however, be very clear as to what they are so that we can make a wise decision with regard to the pattern of language use in the nation and education.

V

We need English in India today for two very practical reasons: first as V. V. John puts it very directly, "We need English because we need English books"²² and, second, because India happens to be a multilingual country. Every other argument is either irrelevant or wrong. For example, R. Bhaskaran's assertion²³ that English is committed to the ideals of democracy, socialism... fair play, etc. is a hysterical argument. Languages do not have a way of being committed to ideals, good or bad. Assertions about English being more 'efficient' than Hindi (or any Indian language) is probably wrong as any linguist who has studied the structures of these two languages in depth can easily show. In fact, it is possible to show that English allows more ambiguity to occur in its sentence structure than Hindi does, and in many ways its devices to express certain (grammatical) meanings are cumbersome.²⁴ And anyone who has ever tried to translate a good piece of Indian literature into English can also testify to the frustration caused by the limitation of English in capturing the nuances of the

*characteristic way of pronouncing English, such that it has been possible in India to talk of an Anglo-Indian (or earlier Eurasian) accent", p. 57; . . . "It is, however, in certain prosodic features that the most distinctive *deviation* (my underline) from R. P. (Received Pronunciation) is to be observed . . . ", pp. 66-67.

²² V. V. John, *op. cit.*, p. 82.

²³ R. Bhaskaran, "The Case for English" in Shah, *op. cit.*, p. 72.

²⁴ *Ibid.*

original. This, of course, is not to assert that it cannot also happen the other way around, which simply proves that it is futile to argue on these lines.

But regardless of the (irrelevant) question of the quality of English (or Hindi) as a language, it so happens that English is extremely rich in its books, which have served us in the past and can continue to serve us for a long time in the future. If we keep English, we would not only not suffer a setback but would also have a continuing source of scholarly materials even after all Indian languages including Hindi become much richer in their scholarly literature than they currently are. English will be an additional source for scholars just as even English-speaking scholars need to have additional source languages, such as, German and French. There is no reason to suppose that serious Indian scholars themselves can manage just with English. Like other serious scholars, they will also have to acquire proficiency in other languages according to their needs and Indian universities must make provision for instruction in other important source languages. But as the single most important language in this regard, English, at the present time, is unparalleled. Therefore, the teaching of English, at least in our educational system has to be not only compulsory but has also to be strengthened further. Besides, English also happens to be the general purpose link language of the world and our best source of contact with the outside world. Every major university in the world teaches it either for its source language function or for its link language function. There is absolutely no reason why India should decide to do away with it.

The relevance of English is further strengthened also because of the multilingual situation of India. However, the functional role of English in this situation of multilingualism must be understood properly so that we do not delude ourselves with pointless rhetoric. If India were an entirely monolingual country, then no matter how 'poor' or 'undeserving' that solitary Indian language might have been no one in his right mind would have suggested importing a brand new 'well developed' foreign language to be instituted as the official or link language of India or even as the medium of instruction. A case might have been made though, for a strong programme in such a language in the educational institutions. On the other hand, the multilingual situation of India in itself does not automatically presume the need for a foreign

language, as the case of Russia exemplifies. The question whether Russian was 'developed' or not at the time it was adopted as the language of the Empire is irrelevant because surely that was not the consideration taken into account when the imperial Russian administration used such a slogan as "One Tsar, One Religion, One Language". After a brief post-revolution suspension of this policy the same approach was adopted in the neo-Tsarist slogan "One Union, One Party, One Alphabet" leading to the adoption of Russian by a Governmental and Party decree on March 13, 1938.²⁵ Besides, with the elementary and secondary enrolment of 3.85% of the entire population until as late as 1910 and with only 4 universities in Russia proper until 1914, the Russian language at that time could not be considered to have been a great instrument of exceptional scholarly activity on a wide scale despite a few literary names like Chekhov, Dostoevsky, Tolstoy, and Turgenev.²⁶

However, the multilingualism of every country has to have its own special solution by taking into account its special situation. The presence of English in India is part of this special situation, even though it was simply a historical accident and not an inevitability. As a result, English has assumed a certain role (just as French did in England after the Norman Conquest),²⁷ a restricted one to be sure, as a link language for scholarly purposes and for the professions because of another accident of an educational policy decision made by Macaulay. Probably any question about the role of English would not have arisen if English were not here already. But it is now a part of the complex pattern of language use that has evolved in the country, and it cannot be eliminated without causing problems of some magnitude. Besides, there is no need to. In a multilingual country, people naturally grow up to be bilingual and trilingual depending on where they live, work, or what their interests are. English serves some useful purpose and is to be treated simply as part of this

²⁵ I have no wish to make a substantive issue of it. I bring it up only because such erroneous opinions were voiced even by the members of the Indian parliament during the 1968 language controversy.

²⁶ J. S. Roucek, 1961, p. 21.

²⁷ We have already discussed the non-relevance of creative literature to the 'efficiency' of a language as a vehicle of different kinds of scholarship. See Bilinsky, 1968, for information on education in U.S.S.R.

multilingualism. At the same time, we must not forget that English is only a part, useful and usable only in certain situations, and that it shares this role of 'link' with other languages, particularly Hindi. Looking upon it as the solitary link language, which can bring unity, or trying to promote a kind of scholarly monolingualism through it is just as misguided as the attempt to eliminate it. In fact, its role has to be redefined. Attempt has to be made to withdraw it from its link function where its usefulness is extremely limited or unnecessary or downright harmful. Some aspects of this question have already been discussed. In cases where it cuts out a large part of the potential audience or requires a great investment of time and resources on the part of the people only to serve them marginally, it is positively harmful. The role of English as a link language is only a mixed blessing as it is and will not become an unmixed blessing unless its scope is redefined.

VI

Where do all these considerations leave us with regard to the position of English in our educational system? It seems its role has to be redefined here, too. It is quite clear that we need to retain English and, if anything, strengthen its teaching. But does all this entitle it or make it necessary for it to be also the medium of instruction? Other things being equal and with no intention of any change, it will probably help a little. But other things are not equal and there is no obligation to avoid a fruitful change. On the consideration of all the pros and cons, the balance sheet seems to be against English as the full-scale medium of instruction.

We all know the emotional arguments made for the adoption of Indian languages, for example Mahatma Gandhi's comparison of the mother tongue with mother's milk but they do not concern us here. What are the considerations, entirely in educational terms, with some relevance to the pattern of language use in the country? The standard arguments in favour of English as the medium of instruction are: quality of education, poverty of the regional languages and their inability to handle the demands of the role of a medium of instruction, paucity of books in the regional languages, the near-impossible task of large-scale translation, and the contact and mobility of scholars. Some of these

arguments, undoubtedly, have merit. But they have to be weighed in the context of the totality of the advantages and disadvantages of having English or the regional languages as the medium of instruction. It may be that we have to sacrifice some good things for some better things. The other arguments are simply mindless popular notions or clichés. For example, the question of English *versus* the regional languages purely as instruments of communication has already been discussed at some length and there is no reason to suppose that English as a language is any better. It is simply an infantile feeling that important things cannot be said in a language that even a man on the street can use. The question of technical terms or specialized vocabulary for some areas forms an initial—and essentially a temporary—handicap, but it is only a very small part of the total function of language use as a medium of instruction. Besides there is no way of developing specialized vocabulary—effectively and quickly—other than using the language for those purposes. It is both interesting and ironical that exactly the same uncomplimentary things were being said about English in the eighteenth century when it was trying to replace Latin as the active language of serious scholarship. The detractors of Indian languages will prove to be wrong the same way as the detractors of English were. Besides, it does not take very long for a language to adapt itself to the needs of a new role as, again, the example of English itself shows; English, which to many Indians seems to be the epitome of suitability as a scholarly language now managed to displace Latin and start its career as a language of serious scholarship only in the nineteenth century.²⁸

²⁸ The humiliation of English in relation to French is apparent from the following passage by Robert of Gloucester: "Thus England came into Normandy's hand; and the Normans at that time . . . could speak only their own language and spoke French just as they did at home, and had their children taught in the same manner, so that people of rank in this country who came of their blood all stuck to the same language that they received of them, for if a man knows no French people will think little of him. But the lower classes still stuck to English and their own language. I imagine there are in all the world no countries that do not keep their own language except England alone. But it is well known that it is the best thing to know both languages, for the more a man knows the more is he worth" (quoted from Jespersen, 1964, pp. 87-88).

There is a popular misconception about the quality of education linked with English. On the one hand, quality is supposed to be a function of using a particular language as a tool (rather than the scholarly content in education) and, on the other, it is identified with the scholar's control of English. People of the older generation generally bemoan the poor standard of *education* because they find that the high school graduates of today cannot even write a letter in *English* correctly. Apart from the fact that most of them are not aware that their own English is extremely limited in range and variety and full of pleonastic clichés if not downright 'adventurous'²⁹, they completely ignore the fact that the present students are much better than them in mathematics, science, social sciences, and various other subjects including the mother tongue. (Why should it be less embarrassing to find older professionals extremely deficient in the mother tongue!)

The blame for the rot, which surely does exist, has to be put somewhere else. In fact, they do not even realize that the intelligence and the scholarship of a student may get not only ignored but hopelessly inhibited if he is constantly called upon to express himself through a medium he cannot adequately control. There is no direct correlation between intelligence and foreign language learning but such an attitude results in the belief that if your English is limited, your intelligence is limited, too.

An important point that is very often missed in the arguments for English as a medium of instruction is that—as anyone who has a serious professional interest in the discipline of foreign language teaching or applied linguistics can testify—it is simply not very easy to learn a foreign language well enough to acquire the degree of ease, flexibility, and effectiveness that will be necessary if it is to be used *actively* and *creatively* for *all* of the various aspects of education: classroom instruction, reading books, answering question papers, and writing original term papers. It is not impossible but it is not easily and normally possible, and requires a great deal of time and energy which is completely disproportionate to its advantages. If English is only a tool, then it is ridiculous to invest so much in simply acquiring the tool; the time and energy could

It is perhaps pertinent to note that the curious mongrel language known as 'Law French' continued in use in England until the eighteenth century.

²⁹ See Gleason, 1965, p. 29.

be better spent in learning the subject. The requirement of such an extensive role of English as the medium has not really promoted scholarship; it has inhibited it. Such a situation is bound to promote rote learning, an anxiety complex, and a sense of insecurity in one's scholarship. The scholarly luminaries on the Indian scene are simply exceptions who have succeeded *in spite of* the system, not because of it.³⁰ For every scholar of this kind, there are at least a thousand who could have done better if it were not for such an extensive role of English as the medium. The objection raised here is not to the use of English in the medium function *per se* but to the extensiveness of its use.

The distinction that is sometimes sought to be made between English as the medium for some levels as opposed to others or some disciplines as opposed to others is misguided too. If English is that useful, then it must be used for all disciplines and all levels, including the elementary and the high school. In fact, it was the medium of instruction for all disciplines at the high school level until not long ago, but no one seriously suggests reintroducing it there. Some of the same considerations must be valid for the higher levels, too. Similarly, it is considered axiomatic that if English is to be optional, it might be so only in the humanities. Science and technology must have only English as the medium. This, again, is paradoxical because science and technology do not need the language that extensively. They use a very restricted sub-set of English, which is mostly formulaic and rather rigidly patterned. It is the people in the humanities who are required to write and understand variously written prose styles with subtleties of emphasis and argument. I cannot see how anyone can fully appreciate a philosophical argument without a full control of the language.

The point is that the question of the medium of instruction has been faced more with panic and a vague feeling of being about to lose something valuable, rather than any consideration of cold facts. The only relevant considerations in favour of English as the medium of instruction, in case we adopt the regional languages, are: (1) how are we going to solve the problem of scholarly materials—reference materials as well as textbooks, and (2) how are we going to maintain some contact and mobility between

³⁰ For Example, in V. M. Tarkunde's Foreword in Shah, *op. cit.*, p. vi.

the various universities of India? There is a third point, too, which scholars do not like to raise: what are we going to do with all those professors and scholars who know only English for their professional work and are ignorant in their respective regional languages.

VII

It is true that there are no easy answers, which is not tantamount to saying that the *status quo* in regard to English is the only answer. The answer does not have to be an either-or proposition; it could be a dynamic *status quo* in which English is not completely eliminated as a medium but is delimited to that aspect of its role as a medium where it is most useful. For classroom instruction and examination, English is a dead weight rather than help where the intricacies of its active use can only limit effective communication. Besides, it will be unnecessary and therefore wasteful to invest time and energy to acquire the level of active competence that it will demand when an alternative medium is more easily available to both the teacher and the student. On the other hand, as a source language for reference materials, and even textbooks, English is unsurpassable in the India of today. The former function should be taken over by the regional languages and the latter should be actively retained for English without necessarily excluding the regional languages. The worry that the students will not be able to use the English books is unnecessary because the students will be trained to be diglossic³¹ in this regard from the very beginning. Most Indians are diglossic in other spheres of their lives, anyway.³² Besides, whatever is lost of the marginal *strengthening of English through its use as the medium will be* compensated for by a more vigorous and properly planned teaching of compulsory English as proposed further below.

There is no need to translate entire university libraries (or professional libraries) or any part of them because the educational plan for English will ensure proper competence to make use of them. In terms of effectiveness, this is a less demanding and more

³¹ See Kindersley, 1938, and Kachru, 1969, pp. 635-653.

³² Firth's comments in Firth 1964, pp. 210-11 are illuminating: "It is becoming increasingly clear that the higher but psillactic, alien culture will have to be sacrificed to popular enlightenment in the popular

realistic possibility with no substantive loss and much gain. As scholarship and demand grow, libraries will have more books in the regional languages, to add richness to the library, not to replace the English books. If a suitable textbook in the regional language is not available, a suitable textbook in English can be used. It will be more desirable to write textbooks than translate them unless some of them happen to be indispensable. But this is nothing strange. Even in the U.K. and the U.S.A. extremely valuable textbooks are translated into English from other languages.³³ However, original textbooks, not to speak of reference books, in the regional languages cannot start getting written unless these languages are used as the media of instruction.³⁴

As regards contact and mobility, this will be effected through the link languages, particularly English for a long time to come, just as it is done today. In fact, too much is made of this supposed difficulty. It is not every day that a professor of student transfers from one university to another, whereas the task of regular teaching is an every day affair. We cannot ignore the efficiency of the latter for the occasional convenience of the former. Short visits are no problem. A visiting professor may teach in English if he does not control the regional language. Such adjustments for visiting faculty are made everywhere all the time.

The suggestion above does not really preclude teaching through English (for whatever reasons) altogether. It only recommends abandoning certain functions of English as a general policy because of its very questionable usefulness. This applies as well to

languages. And the great chemists and the great physicists of India will soon be able to do their work in Urdu or Bengali or Tamil quite as well as in English. The superficiality characteristic of Indian education is an inheritance from the superficial Lord Macaulay. And so long as the English language is the instrument of power in the land, it will be difficult to get fathers ambitious for their sons to take their own languages seriously. But if India is to take any sort of equal place in our Commonwealth they will have to be taken seriously, and the sooner the better. It has often been said that Indian education was organized to turn out clerks. But by far the greater number of Indians 'literate' in English are not even good clerks. The few brilliant men succeed in spite of the system."

³³ See Ferguson, 1959 for the explanation of this concept.

³⁴ I myself teach a course at the University of Wisconsin for which the best available textbook happens to be in French. We use its English translation.

university is thoroughly unsuitable for this job, both in terms of his knowledge of the language, and his understanding of what to teach and how to teach it. With proper teaching of English, the competence in English of an Indian university scholar (or professional) will be better, if anything, than what it is today with the indifferent teaching of English as a subject plus its use as a more or less ineffective medium of instruction. He will be in a better position to use it for the legitimate scholarly purposes—either study or contact—and at the same time will not suffer from whatever disadvantages there are in its undefined and unstreamlined use as a medium of instruction. The regional languages also will get their rightful place, prosper, and make their desirable scholarly contribution. The net result will be infinitely more advantageous to all—English, the regional languages, the university scholar and the nation.

How can this be structured? The following is just an outline of the plan of action. English must be made a compulsory subject of study *at least* from the fourth grade to the bachelor's degree stage. It will definitely be desirable to start it even earlier. On the basis of what we know about the biologically determined linguistic propensity in the longitudinal development of the human organism,³⁶ the earlier the business of language teaching starts the more effective it is. Children at that age can easily handle the task of learning three languages without finding it specially burdensome³⁷.

The compulsory English course must be entirely language-oriented, *from the beginning to the end (up to the college level)*. Contrary to the popular belief, there will be much to learn and much to teach. Literature courses in English should be provided for but separately, to be treated just like a course in philosophy or chemistry. It is a separate discipline with some overlap but

. ³⁶ See Verma, 1969, p. 116. For detailed arguments about specific determinants in language acquisition see Lenneberg, 1964.

³⁷ The place of Hindi in the language planning in Indian education is not discussed here. It is presumed that the three-language formula is essentially correct. But even so, for a competence in Hindi comparable to English, Hindi because of linguistic affinity and indirect learning will not need to be taught as a (compulsory) language at the university level. A third language—either a South Indian language or a neighbouring regional language—must be *rigidly* enforced for the Hindi regions at the school level.

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A Case for Indian Languages

D. P. PATTANAYAK

Most analysts perceive of the language problem in India in bipolar terms. Some view it basically as an outgrowth of the competition between Hindi and Urdu, the rival symbols of Hindu-Muslim communalism; others view the rivalry as between Hindi and English, one representing national chauvinism and the other international egalitarianism. Many think of the language conflict as involving the regional language versus Hindi, symbolizing local chauvinism and nascent nationalism; while still others view it as a north versus south dispute—between Aryan domination and Dravidian resistance. Some others even view it as competition among economically backward interior regions and the more prosperous coastal areas.

Such views, based on linear and binary polarities, are essentially a construct of Western thinking. These polarizations are both individually and collectively distortions and falsifications of reality. The changing role of language and the consequent problems in the political and academic sphere cannot be oversimplified and pigeon-holed in such a fashion. The latest language-related conflicts have to be put into a larger perspective and seen as the search for a new set of social paradigms. In the process of a social revolution that is attempting to move the country from tradition to modernity, the assumptions and rules of the past no longer apply and new hypotheses must be put forward as alternative

goals. The one-language, two-language and three-language formulas are some of the competing alternatives set forth for India's modernization and all three have been found unrealistic and unworkable.

It is now realized that anyone wishing to participate fully in the cultural life of the twentieth century world has to know up to a half dozen different languages. Under such conditions a three-language formula may be a desirable strategy for India, but it can never be the goal. Because of the multiple sub-cultures of India and their expression through major regional languages, various scholars have floundered in their analysis of the language question.

Regardless of whether one views language as a determinant or carrier of culture, all would agree that it is an integral part of social life. The Indian languages do not merely signify social interaction, they represent social values. The major languages of India with their thousand-year cultural traditions and well-developed literatures have adapted to their environment in such a way that they represent the formation and expression of distinct cultural personalities. The cultural foci or the behavioural realities may be considered as one as far as India is concerned, but the points of view to describe and interpret the cultural facts are as numerous as the languages themselves.

A case for Indian languages presupposes that there is a case against them. Making a case for Indian languages in India is like making a case for Hebrew in Israel. However, as long as misconceptions about language and culture and language and education persist, a plea has to be made for the Indian languages to dispel misconceptions based on uninformed emotionalism and/or narrow self-interest. Any case for Indian languages necessarily includes English. English is part of the mosaic of the Indian linguistic scene. It is treated as something more than a language—as a vague, romantic civilizing influence. This attitude in and of itself has created the need to justify the continued use of the Indian languages. Whether one studies the ethnography of communication or the ethnolinguistic consequences of the cultural miscegenation in the country, the picture that emerges includes English alongwith the Indian languages. However, since a separate case is being presented by others for English in India, it is sufficient to point out here that English can only have a strong

supplementary role and cannot be viewed as an alternative to the Indian languages.

Both the similarities and diversities of culture in India have to be accepted as the basis of any discussion of the nation's linguistic scene. Overemphasizing diversity has led to pessimistic prognosis concerning the possibility of national unity. On the other hand, overemphasizing similarity has resulted in ignoring the distinction between expected and habitual language behaviour and in concluding that Hindi can be imposed on the entire country to the total exclusion of other Indian languages. Both the views are partial and one-sided and need to be rejected. Any case for Indian languages has to take note of the existence of the multiplicity of Indian languages and dialects and the consequent stresses and strains, and levelling and compromise which arise from their interaction at different levels.

The imposition of one language on the country has had an effect far from that desired by its proponents. Adopting Hindi, the major Indian language, has strengthened the anti-Hindi forces precisely because no clear definition existed for the role of the official language. The overzealous advocates of imposing Hindi on all Indians have violated one of the principal tenets of democracy by ignoring the rights and privileges of the minority and substituting it with the tyranny of the majority.

This phenomenon has roots in the past as well as present. In the last century the fight of Assamese and Oriya against Bengali imposition and in this century the struggle of Bhojpuri, Maithili, Rajasthani, Konkani for the recognition of independent language status, are examples of this. Various efforts have been made in India against Hindi and English to thwart such majority rule. Many united fronts have been formed on the basis of anti-imperialism against a specific language. But these very forces close their eyes to the tyranny of the majority over the linguistic minority in most of the states. For instance, Tamils while opposing Hindi, are tyrannical towards the Todas, the migrant Kannadas and the Telugus in the state. The four per cent English-knowing people trying to impose English on the rest of the country is also tyranny. When one sees that even those who are struggling to establish their identity close their eyes to the tyranny of the majority over the minority or *vice versa*, one can at the best say

that opposition to linguistic tyranny is cherished in theory but violated in everyday life.

At the time when the minority was the status group and hence the point of reference, the emulation of the reference group behaviour was considered a key to upward social mobility. The speech behaviour of this reference group was the social norm. But social norms are shifting phenomena, not necessarily dependent on high caste or the behaviour of the privileged class. A network of complex social interactions resulting in a wide social acceptability of a trait, feature or behaviour component determines the norm. Under these circumstances, communication efficiency is bound to be more important than mere social grace. There can be no effective communication among individuals and groups when one side is branded socially inferior as soon as it speaks. Since the attributes of modernity include rationality, equality and social justice, disparities among individuals and social groups must come to an end. This is possible only through the languages of India that will encourage maximum communication with minimum expenditure of social energy and minimum sacrifice of democratic socialist values.

Participatory democracy and government by advice and consent as an Indian political goal inevitably conflicted with the rule by English speaking minority. In a country faced with population explosion and growing illiteracy, the democratic process with one man one vote and an administration conducted in a language unintelligible to the common man were contradictions which could not be defended. If, under alien rule, a person tried in a law court did not know why he was convicted, nobody worried about it. But under Indian self-rule this anomaly could not continue. The rising tide of expectation generated by self-rule was incompatible with this caste-class transformation and identification. The dynamics of the situation led to the inescapable conclusion that for the *maximum* participation of the common voter in the country's government, the major Indian languages were the only vehicles.

If the languages used in regional administration are the major languages of the region, the possibility arises of the growth of a narrow ethnocentrism which promotes particularistic loyalties and runs contrary to the socio-political and economic interests of the country. There is no doubt that in order to cross internal

language barriers, to foster greater social mobility and widen internal communication, to fight regional chauvinism and above all to create a national identity, a *lingua franca* is essential. However a regional or local language needs to be supplemented with one or more international components. This is necessary in order to promote communication with the international elite, to participate in world commerce and politics, and to live a full cultural life in the modern world. It must, however, be emphasized that any attempt to promote national and international aspects of the language at the cost of the regional language is bound to create emotional problems as much as their exclusion is likely to create an identity crisis or offend modern egalitarianism.

In India emphasis on local and regional cultures has considerably strengthened in-group traditions and values and created problems like the demands for constitutional recognition for Konkani, Maithili, and so on. This local and regional emphasis has generated an aggressive nationalism while the local and international focuses have generated a communication gap among the educated, the uneducated, and the less educated. It has created problems like Nagaland where the declared official language is English. In India the national and the international can grow only on the solid foundation of the local or regional. If democracy is to succeed as truly participatory, there is no other alternative but to build it on the basis of Indian languages.

In the mass illiteracy in the country (in the 1971 census the literacy rate was 29 per cent), the question of what the official state language should be affects an insignificant minority (in the 1961 census, matriculates and above constituted less than 2 per cent of the total population). This minority, conscious of its elite function and role, can never remain monolingual and the question of their estrangement from each other and from the international elite is thus a pseudo problem. The real problem in India is widening the communication among the masses and the elite, among the Government and the people.

The academic structure of the country should provide the leadership and the ethos to maintain the values and achieve the objectives adopted by the country. If the regional languages are to be effective as vehicles of administration, then good education has to be ensured in the regional languages.

Historically, language teaching, particularly the teaching of

Indian languages, has by and large, been without purpose. The situation has been aggravated by untrained teachers, outmoded techniques and irrelevant instructional materials. English was learned because it was a badge of privilege, and it bestowed wealth, rank and status on those who worshipped it. The English-knowing elite performed a crucial relay function in the two-step flow of information between the rulers and the ruled. When India attained independence, the role of the elite was reappraised and changed and the question of language was considered lost for Indian languages. Momentum and the ritual of teaching English in the ageold tradition continued. With the adoption of participatory democracy as a political goal and the creation of a new vernacular, elite English became all the more anachronistic and the situation continued to drift.

As the education of the country is structured today, out of an approximate 26,000 sections of secondary education in the country, about 22,758 offer regional languages, a little over 1,700 offer languages other than the regional, a little less than a 1,000 offer English and about 1,500 offer English and an Indian language as the medium of instruction. About 54 per cent of the universities in India teach in the regional language. This reflects the national aspiration and the effort to meet the challenge well. What is really striking, though, is the half-hearted measures all round. In states where the regional language has been adopted as the medium of instruction, it is yet to be declared as the medium of administration. With the English versus Indian languages debate continuing unabated among the academics, and the politicians using this as an issue to their advantage, both the teaching of English and the Indian languages suffer. This needs to be remedied immediately.

With the rapid growth of science and technology, there has been a fragmentation of knowledge and a growing alienation among different disciplines. As in the international sphere, there is a growing gulf in knowledge between the developed and developing countries, so also between the specialist researcher and the common man. Unless a conscious effort is made and some mechanism is developed to share knowledge with the common man, there is bound to be a revolution which will throw away everything irrespective of its usefulness to society. We do not seem to be aware that concentration of all knowledge in a

minority group, who wear it as a passport to privilege, is as potential a danger to democratic socialism as unequal sharing of wealth.

All students of language dynamics in India agree that regional language is the only effective link between the elite and the masses in any region. This link needs to be further strengthened if the Indian society is to be led constructively towards the path of modernization. There is a strong common sense pronouncement about the Indian languages prevalent which borders on folklore. It holds that the Indian languages do not have enough words and phrases to enable the expression of scientific discourses; that is why they are undeveloped languages and are not fit vehicles of education and administration. This view is a dangerous half truth and it ignores the inbuilt mechanism of any language to expand itself to cope with the verbalization of rapidly expanding experience.

What has happened so far in India is that the training that is imparted in science, technology, or in any branch of human endeavour, in a medium other than the mother tongue does not transform itself into the realm of the actual experience of the learner. As a result, even the best student often repeats other people's views and theories but seldom can creatively apply it to solve problems on his own. Once Professor Satyen Bose (of Bose-Einstein fame) told me that if someone cannot teach physics in his mother tongue, it is not because he does not know his mother tongue, but because he does not know physics. Here 'knowing' is used obviously in the sense of creative involvement in the discipline where it becomes part of the experience of the researcher or the teacher. It is in this sense that English has become a barrier between a good education and the student. Another good example is furnished by the standardized creativity test in English given to the high achievers at Aligarh Muslim University by the Department of Physics. The erratic nil result obtained from the test worried everybody. But when the test was translated into Hindi, the expected standard results ensued.

It must be underscored, however, that mere acceptance of the regional media would not ensure a better education. The contents have to be continuously enriched if the regional language media are to deliver the goods. It is only then that education will be meaningful in the country.

The regional language in most states is the majority mother tongue in the region. It is admitted by all that the mother tongue

medium is best suited for concept formation. All these years we were duplicating experiments, repeating up with the progress made elsewhere without creatively participating in the creation of knowledge and significantly contributing to the arts and the sciences. If a breakthrough is to be made in the face of such placid stagnation, the language of creative thought and action, the mother tongue, has to be given its due place. As indicated above, the nearest one can implement this ideal situation is by adopting the regional language as the medium of instruction and as the medium of administration. Education will only be complete by balancing it with one or more language of added comprehension. In short, a country like India can only do its language planning on the basis of the acceptance of multi-lingualism, with the dominant role played by Indian languages for purposes of internal communication.

The growth of Indian languages has been stunted due to a variety of reasons. The English educated elite who is at the helm of affairs is generally apathetic towards the development of regional languages. Until recent times, study of languages was mostly confined to the study of literature. The regional languages were not put to use as carriers of scientific knowledge and consequently the humanities were better developed than the sciences.

Modern thought and sensibility in all their subtlety could be conveyed only if the language is used in such contexts. People who have modern mind are not fettered to one language and react to various situations in different languages. This leads to cross-fertilization, thereby enriching the structure and content of the languages used. If Indian languages were used for conveying contemporary ideas, the problem which seems insurmountable could be solved in no time. The challenge, therefore, is to devise mechanics to meet these problems rather than pose problems as lever for inaction.

In the present system of education where the textbook is the master of the classroom, it is only natural that more emphasis is given to technical terminology rather than to the concepts underlying them. Lack of technical terminology and their diversity in different regional languages came in handy for those who wanted to oppose the use of regional languages as media of instruction. Equivalence of standards, mobility of teachers and students,

and swift dissemination of knowledge over the length and breadth of the country are problems which are often held against the use of regional languages in education.

The English educated administrators find an instantaneous switchover to the regional language as media of administration extremely difficult. Since they are responsible for implementing any decision in this regard, their ambivalence is responsible for a lukewarm to nil implementation of the multi-language/solution. In short, the English speaking elite who enjoy the benefits of English education and who have appropriated to themselves the responsibility of providing leadership to the society at large are the main sources of obstruction to the development of Indian languages.

A curious opposition, however, emanates from the oppressed and the lowly in the society. The Bahujana Sabha in Maharashtra, for instance, had at one time put forward an argument which seemed convincing to many. They saw in the regional language movement a conspiracy of the high caste English speaking vested interest group in depriving them of the benefits of English education particularly when higher education was within their reach. What is relevant in this case is that those who gave support to the use of the dominant languages as media of administration and education, could not create an image that Indian language education could provide the same or at least comparable economic privileges as English education up to a certain stage. In any case, by juxtaposing English and Indian language education the privileged elite group successfully created the impression that those who are in favour of Indian languages are anti-English, anti-modern and anti-scientific. The English protagonists created an anti-Hindi bogey which is injurious to the development of

and politico-cultural realities of the country. It is an approach of building balanced multi-lingualism on the basis of controlled bilingualism at various stages. It is a case for tolerating variations not only within the macro-structure, the country as a whole, but within the micro-structures, the constituent states and the languages representing them. It is a case of partnership of the dominant Indian languages with not only English but other foreign languages which could serve as windows to the outside world. It is a case against intellectual slavery and for creative participation in the production of knowledge. It is a case for sharing knowledge not only with professional elites but also with the common man who has contributed towards building a system which permits meritocracy to thrive.

Part Six

Examinations

Examinations: The Strategy of Change

AMRIK SINGH

In saying that "if we are to suggest one single reform in university education it should be that of the examinations," the Radhakrishnan Commission (1950) did a signal disservice to higher education. This may strike some people as a provocative, if not a wrong-headed, statement. The fact of the matter is that this sentence has been quoted so often out of context and usually as an alibi for inaction that it has almost become a cliché. Most people who quote this sentence do not stop to consider what the real issue is. The real issue in higher education is the poverty and ineffectiveness of teaching. Bad and unreliable examinations are only one aspect of it. To regard examinations as the central issue in higher education is to start with wrong premises and therefore arrive at wrong conclusions.

No one can deny that examinations are an exceedingly important part of the academic process. But surely to argue that by improving them the academic process would *ipso facto* improve is to oversimplify. Examinations test what students have learnt. But what and how they have learnt is equally important, if not even more important. Whether it was intended or not, the recommendation of the Radhakrishnan Commission came to be interpreted in this way that if something could be done to improve the examinations, the academic process would thereby automatically improve. This was a profoundly fallacious approach. There can be no question

that examinations are an important part of the academic process. But to seek to improve one part of the process without so much as even recognizing the importance of the other, indeed the prior part, is a kind of solution to the problem which, given the circumstances, could not have succeeded.

During the last two decades while efforts to improve the examinations have continued to be made, hardly any attention has been paid to improve the quality of teaching. To take only one aspect of the problem, the rate of expansion has been so rapid that those who would have been regarded as ineligible for teaching a few years ago are not only recruited but are expected to carry the main load of teaching responsibilities. Apart from the poverty of talent, other factors such as relative wage structure and policies relating to promotion have also contributed to a steady deterioration in the quality of those who are drawn into university and college teaching. Unless something can be done to arrest this process of deterioration and improve the tone and quality of teaching, no amount of preoccupation with examination reform can hope to redeem the situation. Instruction and assessment are two stages of the same process. To focus attention on one and not acknowledge the importance of the other is the surest way of ensuring that neither will improve. And this is precisely what we have succeeded in achieving during the last quarter century.

In another important respect too, the general thrust of Radhakrishnan Commission's discussion on examinations did not lead to very happy results. This Commission very correctly called attention to the defects and inadequacies of the examination system as prevalent in the country. While doing so, it referred to the remarkably innovative work done in this field in the United States and some of the European countries. The next few years saw considerable American influence on Indian academic life and one of the more telling aspects of that influence was the criticism of the Indian examination system in terms of the American practice. It was argued that satisfactory results could be achieved only if Indian academics could assess their own students as was done in the USA. Quite a number of universities switched over to what came to be called the system of internal assessment. Before long however they ran into serious difficulties. How to combine marks given in the sessionals with marks given by external examiners? Not only that, experience showed that the weaker the

college the more generous it was in awarding marks to its students. Then there were cases of victimization of students as also of malpractices and sometimes downright corruption. Speaking broadly, from the mid-fifties to the mid-sixties was a period when the experiment of internal assessment was tried in something like one-third to one-half of the Indian universities. Experience almost everywhere was disappointing. It was different, however, in professional faculties like engineering and medicine. It was also different in institutions like IITs, agricultural universities and such other institutes where students were selected on a highly competitive basis, the quality of staff was good and the student-teacher ratio was favourable.

The Education Commission while considering this situation came to the conclusion that the system of public examinations had come to stay and that it was difficult to replace it. While the Commission recommended that internal assessment was important it recognized that the internal score could not be merged with the external score. Instead, the Commission suggested that this score should be shown separately in the marks sheet of every student. It is quite some years since this recommendation was made. Except for a handful of universities it has not been implemented anywhere. By itself it is a reasonably good formula but the chances of its being adopted are as remote today as they were yesterday. And this indeed is the heart of the problem.

There is no getting away from the fact of the sheer unwillingness of the academic community to make any basic changes in the system as it has evolved over the years. No one else except those who teach and to some extent those who are taught are responsible for the system as it operates today. That is to say, no agency outside the academic system can even be remotely accused of coming in the way of any reform. Such a criticism can be made in regard to several other matters where political considerations intrude and sometimes there is undisguised intervention by those in authority. The examinations are an altogether different matter, however. Almost every decision relating to them requires to and can be taken by the academic councils of the universities. That some of these decisions may appear to make things difficult for students can be a legitimate apprehension. But then, as has been already argued, examinations are only one part of the academic process. The other part which precedes examinations is how instruction is

that examinations are an important part of the academic process. But to seek to improve one part of the process without so much as even recognizing the importance of the other, indeed the prior part, is a kind of solution to the problem which, given the circumstances, could not have succeeded.

During the last two decades while efforts to improve the examinations have continued to be made, hardly any attention has been paid to improve the quality of teaching. To take only one aspect of the problem, the rate of expansion has been so rapid that those who would have been regarded as ineligible for teaching a few years ago are not only recruited but are expected to carry the main load of teaching responsibilities. Apart from the poverty of talent, other factors such as relative wage structure and policies relating to promotion have also contributed to a steady deterioration in the quality of those who are drawn into university and college teaching. Unless something can be done to arrest this process of deterioration and improve the tone and quality of teaching, no amount of preoccupation with examination reform can hope to redeem the situation. Instruction and assessment are two stages of the same process. To focus attention on one and not acknowledge the importance of the other is the surest way of ensuring that neither will improve. And this is precisely what we have succeeded in achieving during the last quarter century.

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imparted and to what extent it is effective or not. In regard to instruction it is the teachers who have the supreme authority and no one else can be held responsible for any acts of omission or commission.

The purpose of saying all this is to affirm that in the sphere of instruction and assessment the exclusive responsibility for what happens or does not happen is that of the teachers. It is they, more than anyone else, who have felt committed to the existing system and hence the impasse. Can anything be done in this situation? It is a very difficult question to answer. For one thing, whatever is happening in the academic field is a reflection, if not also an extension, of whatever is happening in other walks of life. For another, no one in almost any walk of life seems to have any commitment to good and honest performance. Can one in fairness expect a different standard of performance from those in the academic profession? It is a legitimate objection and one which cannot be dismissed without a further consideration of the issues involved.

While elsewhere things are difficult, in the academic world they have almost collapsed. University after university has had to be closed, sometimes for prolonged periods. Even when universities are functioning what actually gets done is very unsatisfactory. Unlike other workers, the academics cannot, though a considerable number of them actually do, turn a blind eye to what is happening. This is only a way of saying that the number of academics who feel concerned at the degree of their own ineffectiveness is not so small as to be negligible. It may be stated on a rough and ready basis that something like 20 to 30 per cent feel seriously concerned at the collapsing world around them and would like to do something to arrest the inexorable deterioration that is overtaking the academic world. Another 30-40 per cent can rally behind them provided these people give evidence of their determination to fight for better academic performance. The remaining 30 to 40 per cent are so poor in quality and so indifferent in their motivation that the real danger to any attempts at academic renovation comes from them. How to deal with them, how to improve their competence, how to make them better motivated, are issues which cannot be considered here but they are a matter of critical importance for the future of our universities.

Speaking therefore of the issue in hand, the examinations, the

really tragic thing is that even those who wish to turn the tide are unable to do so for the reason that they have neither understood the situation correctly nor proposed a viable alternative strategy to solve the problem. According to their understanding, the real problem is examinations whereas the real problem is better and more effective instruction followed by more valid and really reliable examinations. Unless the organic relationship between these two stages of the academic process is understood no efforts at examination reform are likely to lead to any positive results.

If for the sake of argument one may assume that most people do come to recognize the folly of bestowing the greater part of their attention upon improving the examinations and neglecting the importance of better teaching, the question would still remain: what is to be done to improve examinations? This is the issue under discussion. Some of the steps that require to be taken are listed below:

(a) In view of our sociological and academic situation the limitations of what can be done must be understood clearly. The most obvious limitation is that it is not possible to change the system. It is possible however to reform it.

(b) Because of the essential unity and indeed interdependence of instruction and assessment, it is important that close attention be paid to the technique of paper-setting. It is not possible to improve these techniques unless the techniques and content of teaching too are improved. The two approaches must be integrated if satisfactory results are to be obtained.

(c) Fresh thought needs to be given as to how examinations are conducted. The existing system is much too mechanical, rigid and over-centralized.

(d) There remains one more issue which must be considered in depth and that is the issue of internal assessment. This would be discussed last of all.

II

It does not seem important to discuss the limitations of our situation in any great detail. These are, to put it provocatively, fatally obvious. It is legally feasible, for instance, to give every college the right to confer its own degrees. Whether it is academically feasible or not is another question. In a situation, where

over a certain period of time standards of attainment have already got set, any deviation from these standards gets more or less automatically punished. This can happen because the system has got stabilized in such a way that there is a built-in mechanism for regulation of standards. This for instance is the situation that obtains in Britain. In our situation our concern for standards is mostly formal and there are hardly any self-regulatory mechanisms. Such a step is therefore likely to unlock gates of academic corruption. This is not to decry the quality of the hundred or two hundred good colleges which deserve to be given the autonomous status. It would be obviously wrong however to overlook the distinction between these good colleges and the rest of them. Colleges which have over the years evolved a tradition of good management and commitment to standards, of course, deserve to be given the right to be autonomous. To extend this right to others who are patently undeserving can neither be seriously mooted nor can it be considered with any degree of responsibility.

And yet it is this kind of thing that most of our leading academics would suggest. They feel that unless we can unfreeze the existing situation completely no improvement is possible. There is something naive, even romantic, about such an approach. To seek to transform the system radically is to assume that the momentum required to change it will be forthcoming somehow or other. Nobody stops to ask the questions who will provide the momentum, and will it be sustained enough so as to effectively transform the situation.

It should not have been necessary to refer to this attitude of mind in this detail but for two unfortunate facts. The Radhakrishnan Commission put its stamp of approval on such an approach to the problem. In expressing their views therefore, most of these academics feel fortified with the opinion of a high-powered Commission. Secondly, most of the really good academics whom one respects for ability as well as for integrity generally tend to speak in this vein. Indeed they keep on talking in this vein despite the impressive failure of recent attempts to change the system. These failures, it seems, have not brought home the truth to them that to insist on introducing a system which is so different as to be at odds, in a fundamental sense, with the prevalent situation, is to refuse to learn from experience.

There is another dimension too of this problem. Our system in its essentials is modelled on the British system. It is true that the British system has been modified somewhat in recent years but basically it remains the same that it was a century or so ago when we in India borrowed it in the first instance. To be specific, British universities examine their students at the end of the course (usually after three years) and it is this examination which more than anything else determines their rank and their overall performance. The American experience has shown that frequent tests as well as different types of tests perform a very useful pedagogical function and they have therefore tailored their system to suit this approach. The British universities while acknowledging the validity of the American approach have however not modified their system beyond a certain point.

We in India do not necessarily have to make a choice between the two systems. Like the British, we can evolve a new combination for ourselves which really means that we do not have to make an either/or choice. It is this either/or approach which, to some extent, has bedevilled our thinking. To put it another way, all this argument is about what may be described as a non-issue. The issue, to repeat, is not only how to improve our examinations; it is also to seek to improve the quality of our teaching. The moment we recognize that these two stages of the academic process cannot be treated in isolation from each other the argument about these details begins to look somewhat unreal.

In any event, what we are overlooking completely in all these arguments is another thing. We took over the form but not the substance of the British system. The real substance of the British system is the contact between the teacher and the student and the close supervision of his written work which almost every student in that country receives at the hand of his guide. At Oxford and Cambridge this is the heart of their system. In other universities, the emphasis is somewhat different but the student-teacher ratio is so good that in actual effect, at almost every university, regular, written work by the student receives all the emphasis that is due to it. To a substantial extent this is what makes the British university system strong and efficient. It may not be out of place to mention here that at the university level Britain has one of the lowest wastage rates in the world.

In this situation the obvious thing to do is to accept the framework of the existing system and then modify it in respect of some of its important details. Anything more radical than that is foredoomed to failure, if one may so put it. This is the lesson of the last twenty years. To ignore it would be to fly in the face of reality. Unfortunately this is what most of our better academics have been doing. They were exactly the people who could have provided leadership for change. However they got seduced into advocating a strategy which, given our circumstances, could not have been successfully introduced. It is important that they should recognize this fact. In a manner of speaking, they are the natural leaders of the profession. By advocating a wrong strategy they have, in one sense, rendered themselves ineffective and, in another, made it difficult to devise an alternative strategy of change. Before an alternative strategy can be discussed or devised it is necessary to bury the ghost of that misleading notion which has so far prevented the rest of the academic community from grappling with the problem in a manner which is both realistic and innovative.

Most academics recognize that no other single step will produce such positive results as redesigning the question papers. This has been known for quite some time. What is more, this view has the sanction of experience behind it. The National Council for Educational Research and Training (NCERT) operating through its Examination Unit did do some exceedingly useful work in several states in helping them to redesign question papers at the school leaving examination level. In certain parts of India we also get the odd spectacle of students having better types of questions to answer at their school examinations than when they enter college. The universities have remained, it seems safe to say, obstinately impervious to this wind of change. One explanation for it is the absence of any leadership at the university level such as was provided by the NCERT in respect of the schools. But another equally valid explanation is the inability of universities to involve teachers in this scheme of reform. Furthermore, expertise in this field is scarce. Should a university decide to hold a workshop to train a corps of new paper-setters, it would be hard put to finding even half a dozen men of the requisite competence to conduct the workshop.

But perhaps the most disabling factor in the situation is the

unwillingness of the academics to change and to innovate. Behind this unwillingness is the unwillingness (or shall we call it unpreparedness?) of the students to accept new types of questions. Clearly, students cannot be asked to answer questions for which they have not been prepared. If the kind of instruction they have had has not led them to expect certain types of questions they would have good reason to protest against such questions being asked. This is proof, if proof is needed, of the unity of instruction and assessment which has been strained, if not also flouted, by most attempts at examination reform in recent years.

It was partly to maintain this unity of instruction and assessment and partly to overcome the all-pervasive sense of inertia both amongst teachers and students that the scheme of the bank of questions was devised. This scheme which was accepted by the Seminar on Examinations convened by the Inter-University Board in 1971 is now coming to be increasingly accepted. The principal merit of this scheme is that it involves both teachers and students in the innovations that are proposed to be introduced. In the situation that obtains in the country today this is not only desirable but also imperative.

The mechanics of the scheme are simple. Every teacher is obliged to submit at least one question in regard to what he is teaching. He may submit any number of questions but at least one he must submit. The question is framed by him and before it is sent to the university it is tried out on students. In other words, it is discussed in the class. On occasions even the students may frame questions. Indeed it would be desirable to encourage them to do so. All these pre-tested questions are, of course, received in the university office and presented to a committee. This committee sifts them, classifies and catalogues them and eventually prepares a list of questions running into a few hundred. This list is made available to everyone who is interested. No question in the university examination will be set outside this list. If this experiment is to be successful two important safeguards would have to be provided for. For instance, the list must be fairly large, indeed so large as to totally discourage cramming. Secondly, the list must be changed every year. This is important not only to discourage cramming but also to keep students and teachers involved in the whole exercise every year.

The essence of this scheme is to overcome the fear of examina-

In this situation the obvious thing to do is to accept the framework of the existing system and then modify it in respect of some of its important details. Anything more radical than that is foredoomed to failure, if one may so put it. This is the lesson of the last twenty years. To ignore it would be to fly in the face of reality. Unfortunately this is what most of our better academics have been doing. They were exactly the people who could have provided leadership for change. However they got seduced into advocating a strategy which, given our circumstances, could not have been successfully introduced. It is important that they should recognize this fact. In a manner of speaking, they are the natural leaders of the profession. By advocating a wrong strategy they have, in one sense, rendered themselves ineffective and, in another, made it difficult to devise an alternative strategy of change. Before an alternative strategy can be discussed or devised it is necessary to bury the ghost of that misleading notion which has so far prevented the rest of the academic community from grappling with the problem in a manner which is both realistic and innovative.

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which have a bearing on the conduct of examinations. The system which is now in operation might have been useful when the numbers were small and the atmosphere surrounding examinations was much more relaxed. Now with numbers soaring every year and mass copying becoming quite a menace it is a matter of some urgency that the whole routine should be freely assessed so as to make for better efficiency. This means that the rigidities of the present system must be loosened up.

Why cannot examinations be held much more frequently for instance? Several situations of indiscipline and hooliganism arise from the fact that students want examinations to be postponed. Postponement means interruption in the flow of work and dislocation of several administrative arrangements. One obvious way of dealing with the situation is to organize examinations more frequently, say every three months. Let a candidate decide for himself for which particular examination he wants to sit. The analogy of a driving test might be referred to here. A test is held whenever an individual goes up to the traffic authorities and says that he is ready for a test. In other words, the decision to take the test is made by the one who has to take it and not by those whose obligation it is to administer it. While it is true that this analogy cannot be applied too closely to university examinations there is something to be gained from a study of it. If our examinations are held more frequently no one can come to any harm. It will only mean some more administrative expenses and a little rescheduling of arrangements. Beyond that there is no price which is required to be paid for having more frequent examinations.

Any number of objections can be made to this proposal. An obvious one is that examinations are geared to a certain academic schedule. If those passing out cannot adjust to that schedule they will lose time. The answer is simple. Even now many people are losing a lot of time. There are universities in the country which are behind schedule in respect of their examinations by as much as one or two years. This proposal cannot worsen the existing situation though it may improve it. All we have to do is to adjust our thinking to this change. Secondly, there is no reason why it is not possible to break up the rhythm of academic year into two or three parts. This can be done by using the credit system. Every small course carries a certain

tions that most students in our country have. They dread the very thought of an examination. So much depends on it and the outcome is so uncertain. One way of helping to remove this feeling is to say "Here are the 300 questions—a purely hypothetical figure—out of which you will be examined. No questions will be set outside the ones that are already known to you. Plan your studies around these questions. These questions are so comprehensive as to cover every aspect of your syllabus." Clearly, no one can memorize answers to such a large number of questions. What is more, there will be something like ten to fifteen questions about every topic so that no aspect of that topic will remain unexplored. This formula will help both the teachers and the students. For obvious reasons it cannot apply to the numerical and such other types of questions. But then that is a matter of detail. The basic point to recognize is that by adopting this system both teachers and students would get involved in a process which will be mutually supportive rather than mutually alienating. The situation in our universities is so explosive that to introduce any kind of innovation even if it is positively good is likely to be resisted. That resistance can be disarmed to a considerable extent by adopting this scheme according to which the framework of the existing structure is not disturbed but the content gets substantially modified.

The existing system of examinations has been there so long that most people find it difficult to conceive of any change in it. Resistance to change comes from teachers as well as from students. Everyone is suspicious of change largely because they are happy with what is familiar with and partly because there is the fear of the unknown. Who knows what the new system may portend? For all we know, most people may argue, things are bad enough and may, because of the changes introduced, get worse. There are all kinds of misgivings and these cannot be overcome till such time as it is demonstrated that the new changes are for the better. It is basically for this reason that a cautious and graduated kind of change has been advocated. The overall structure need not be changed but important changes may be introduced within that structure. The scheme of the bank of questions is calculated not to arouse too many fears and antagonisms and at the same time usher in a change which is of far-reaching significance.

To some extent the same thing can be said about those proposals

jobs. There seems to be no argument against such an arrangement except that it has never been attempted.

As I have argued elsewhere, the size of the university is limited by its ability to conduct an examination. If this consideration is disregarded all kinds of problems arise. The only logical thing to do is never to permit a university to cross the limit of ten to fifteen thousand. In this context, the university is to be interpreted as an institutional device which regulates and conducts examinations. There are other aspects of the work of the university too but those need not be referred to here. The basic point which is sought to be established here is that in a system where examinations have to be held by a central agency, it is administratively stupid and academically unwise to go beyond the number which can be efficiently handled. Today organizing an examination is such an elaborate and long drawn out affair that once the rhythm of work is broken for any reason it takes months to get back to it. On the contrary, the administrative arrangements should be so flexible and so effective that even if some kind of a mishap occurs it should be possible to set up a fresh examination within a week or ten days.

All these are thoughts calculated to stimulate further thinking on the subject. The tragedy of the situation is that the rush of numbers is so great and the state of the profession is so demoralized that most people oscillate between two extreme attitudes. A large number think that nothing can be done. Some people advocate such ideal solutions that they completely overlook the sociological and academic constraints under which the country is operating. What is required to bring about change is something within the ability of the academics. That these changes will not be particularly radical and thoroughgoing is a matter which need not be argued about too much. Indeed it is so obvious that it hardly needs any discussion. At the same time to adopt the attitude that no change is possible within the system is to condemn oneself. Some change is possible. Only it has to be rational, realistic and attuned to the capacity of the teachers as well as students to accept it. If a definition of this approach must be found, it may be described as enlightened pragmatism.

III

With regard to internal assessment the situation may be under-

number of credits. As soon as a student has cleared a certain part of the examination he accumulates a certain number of credits. These keep on piling up. When the required number of credits has been reached the student may be said to have finished his course. There is nothing mysterious or unsettling about this system. So many universities in the world are following it so very successfully that there is no reason why Indian universities should find it difficult to adopt this system. The crucial problem in regard to the conduct of examinations however is the over-centralization of administrative arrangements.

One may legitimately ask why must everything be so centralized? Why must every student answer the same question paper and sit in the same examination? Why is it not possible for a university to centralize setting of question papers but decentralize the actual conduct of examinations? Once the proposal to have a bank of questions is accepted there would be hardly any problem in having a large number of question papers set. Probably all that a paper-setter would have to do would be to indicate which particular questions should be included in a particular paper. Not only that, there is a strong case for having different sets of questions in the same question paper, each more difficult than the other. Let a student select which particular set of questions he is going to answer. Students should not, however, be permitted to select some questions from one set and some from another thereby creating a muddle. As long as the same degree is given to students (and this is already being done in several places), there should not be much of a problem. Only some students by virtue of their having chosen the more difficult question papers would be assumed to have given a better account of themselves. All these are issues which can be tackled once the existing rigidity and over-centralization of examinations is loosened up. As long as we operate in the straitjacket which has gripped higher education in our country for over a century, none of these questions can even be considered.

In concrete terms, the centralized system of examinations means that the application of a candidate for being allowed to sit in the examination, allotment of his roll number, allocation of a seat to him in an examination centre and all other details connected with the actual operation of the examination are handled by the central university office. It should not be difficult to have a number of sub-offices which can be entrusted with these various

our situation is to have a system in which both internal and external marking balance and support each other. No one is advancing the proposition, for instance, that as in the American system there shall be total assessment by the teacher. Even the most vigorous advocates of internal assessment in our country do not insist on the abolition of external assessment. All that they emphasize is that the tyranny of the external examination should be diluted, and the way to do it is to introduce internal assessment. It is not necessary to dilate upon these difficulties any further except to say that in our country we have to evolve a new system. This system should take into account the unmistakable public confidence in external examinations and at the same time integrate internal assessment with external assessment.

The only way to overcome these numerous difficulties is to adopt the system of relative ranking rather than absolute assessment. Relative ranking is hardly practised anywhere in our country. What is generally done is to award absolute marks on a percentage basis in relation to a certain hypothetical scale indicating pass, second division and first division at a given point. Even grading is not resorted to because this is a system to which most people are not accustomed. But relative ranking is almost unheard of. In educational terms, its importance was recognized by the Education Commission which writing in 1966 observed as follows:

A system of grading must be such as to bring out whether a student belongs, say to the top 20% of his class or to the bottom 20%. It is strongly recommended that even if the present system of examinations and classifying the results is continued, it should be supplemented by giving, in the same certificate, the relative grading of the student, say on a five-point scale. Grade 'A' would mean that the student is in the top 20% of those who have been successful at the examination.

It is time that this recommendation of the Education Commission was resurrected and, furthermore, adapted to the exigencies of the internal assessment system. What is in effect proposed is something like this: teachers should rank their students, whatever be the number in class, in order of merit. The important point to insist upon here is that students are given their relative ranking

stood in this perspective. In institutions where internal assessment works satisfactorily, it very definitely contributes to the fact that those institutions maintain very good standards. The real problem, however, is in regard to the other type of institutions where either this system has not been tried at all for fear that things may go out of control or, worse still, in those institutions which have tried this system and then abandoned it because it did not work satisfactorily. In fact the latter type of institutions behave like those who have been bitten once and are therefore shy to make a second attempt. A fresh look at the problem is therefore necessary.

Wherever internal assessment has been introduced in our universities, the normal thing to do has been to allocate a certain percentage of marks for internal assessment. This system is defective in one crucial respect. Marks are given on an absolute basis by the teacher and if his assessment is erratic or biased or questionable in any way, there is hardly a remedy available to the student. Occasionally there are cases when a teacher's assessment is challenged. If it is only an individual protesting, he seldom can get redress. But when it assumes the nature of a mass protest, the authorities have to respond. In the very nature of things this can happen but rarely. Therefore on the whole, however unacceptable it might be to them, students have to accept the teacher's assessment. All this is said from the point of view of students which is very material. The system of internal assessment cannot succeed unless it is fully acceptable to students. The fact that quite a number of teachers regard it as an unwelcome chore is not under discussion here. Important though it is, this issue can be taken up separately.

Then there is the further question of how these marks are to be interpreted? Are they to be combined with the marks awarded by the external examiner? Or, are they to be regarded as raw marks and combined with external assessment according to some mathematical formula? Or, are they not to be combined with external assessment at all and are to be shown independently as recommended by the Education Commission? Is the marks sheet also to carry the information that the student belonged to a particular college or a department? There is a whole host of questions to be answered here. It cannot be claimed that any university has solved them satisfactorily. The real problem in

For one thing it is mathematically neater and therefore easier to operate. For another thing, and this is more important, the new system can be made to function effectively only if substantial weightage is given to internal assessment. Should the weightage be lower than 50 per cent it is not likely to have the regulatory effect that it is desired to have.

(e) The system of internal assessment can be enforced successfully when one precondition is satisfied: that everything is open and subject to inspection. In other words, whatever midterm tests are held the scripts are returned which means that it is open to students to discuss the details of their assessment by the teachers. Similarly, whatever assessment is arrived at is notified on the notice board and to the students; indeed to parents as well wherever necessary. Furthermore, so as to make everything above board as well as systematic the university would have laid down in advance how many short duration tests a student would be required to take in a term and how many term papers he would be required to write. Possibly one paper per fortnight and one test per month would be accepted as a reasonable norm. All this will have to be worked out in advance. More than that, certain norms acceptable to almost all universities will also have to be evolved.

So far so good, some people might say. But how this formula is to be applied in the case of institutions with large enrolments is a legitimate question that might puzzle some people. The answer is simple, particularly in respect of affiliated colleges. The unit for the purposes of calculation is a particular class. It is the students of that class who are competing with one another, not students in another class or in another college. To take a specific example, if in college X the number of students taking up a subject like economics or chemistry at the undergraduate level is 56, the ranking order has to be given by the teacher in respect of these 56. When the external score of these 56 candidates is received, it is rearranged in terms of their ranking order. Whoever stands first in internal assessment will get the marks of whoever is number two in external marking. And this is how it goes. If the number of students in a certain class is small, the competition is only amongst them. If the number of students in that class is large, still the competition is amongst them. The essence of this formula is that all those students who are studying with a particular teacher are to be assessed by him in terms of their relative ability. It is his

and not 100-point scale marks. The next step is to translate the ranking order into absolute marks. This can be done best of all by placing exclusive reliance on the assessment carried out by the external examiner. Whatever be the marks awarded in external assessment these are automatically translated into absolute marks in the same relative order as had been determined by the internal teacher. After this, the marks received from both sources, external as well as internal, are combined. The formula can be expressed in mathematical terms as follows:

1	2	3	4	5	6	7
<i>Roll No.</i>	<i>External Marks</i>	<i>Ranking Order</i>	<i>Relative Ranking in Internal Assessment</i>	<i>Converted into Absolute Marks</i>	<i>Total of 2 & 5</i>	<i>Overall Ranking</i>
1	30	3	4	26	56	3
2	25	5	5	25	50	4
3	34	2	1	36	70	1
4	14	8	9	12	26	7
5	36	1	2	34	70	1
6	34	2	3	30	64	2
7	21	7	8	14	35	6
8	12	9	10	12	24	8
9	24	6	7	21	45	5
10	26	4	6	24	50	4

N. B. These calculations are based on the assumption that the total number of marks is 100 out of which 50 are allocated to the external examination and 50 are reserved for internal assessment.

Five explanations may be offered in this connection:

(a) The ranking order obtained at the external examination may not be exactly the same as in terms of internal assessment. In certain cases there may even be wide variations.

(b) When relative ranking is converted into absolute marks, the ranking order followed is that of the external examination.

(c) Though this may lead to a certain reordering of ranking in the total score, it underlines in an important way both the primacy of external marking and internal assessment without in any serious way undermining the importance of either.

(d) The formula can operate best when the distribution between external marking and internal assessment is in the ratio of 50 : 50.

pampered; he may have personality problems or some other awkward attribute of character. But as long as other students in the class are convinced that the teacher is being fair and objective in his assessment, an individual's sense of dissatisfaction will not tell upon the efficacy of the formula adversely.

What is totally missing in today's teaching situation is this element of mutual answerability. The teacher is not answerable to the student except in the wider sense of the term. The academic situation being what it is, this feeling of answerability seldom gets to the point where a teacher feels that he owes it to his students to do his best. He could have been answerable to his colleagues insofar as they represent a body of professional opinion. But professional consciousness is so weak and ineffectual in our country that even to refer to it appears to be an exercise in irony. In this situation the only person to whom he feels answerable is some administrative authority above him; it may be the head of the department or it may be the principal. To satisfy them is so easy. All that they can insist upon—and they do not do so very rigorously—is that the teacher has met his class. What is transacted in the class and to what extent the teacher imparts knowledge and awakens in his students the hunger for further knowledge are questions that are neither asked nor answered.

Subject as they are to the kind of social and political pressures with which we are familiar, it would be idle to expect the students to express an opinion about the quality of teaching imparted to them. Occasionally they do so, but their reasons are seldom academic. As a matter of fact they have not been equipped with that kind of knowledge and sensitivity which would enable them to sit in judgment on their teachers. To be able to do that a student must be performing at a fairly high level of competence and, what is more, must be committed to the ideal of scholarship. Our academic situation neither provides for nor enables the students to have such attitudes. The upshot therefore is a feeling of disenchantment and cynicism with whatever is done in colleges and universities.

While it would be too much to claim that this situation can be changed in any miraculous way by the introduction of this formula, at least one minor claim may be made on its behalf. Once the formula is adopted and enforced, it will be difficult both for teachers and students to be indifferent to what the other does.

assessment which is to determine where a particular student is to be placed in relation to others. The other students are no longer in potential but in direct competition with one another. It is this kind of relationship alone between the teacher and the student which will ensure the success of the scheme.

A serious objection to the formula proposed can be that the abilities tested through internal assessment are not of the same kind as abilities tested through an external examination. In this situation, to displace the rank secured by a student in internal assessment by the rank secured through an external examination is neither just nor academically defensible. It must be acknowledged that there is some force in this contention and probably this is the single biggest argument against its adoption. But the argument is not decisive enough for the formula to be rejected outright. While a certain amount of academic imbalance will be imported into the overall assessment, it may not be substantial enough to modify the total result. Secondly, and this is infinitely more important, this formula has the potential for transforming the situation so radically as to promise a kind of breakthrough which may be described in these words.

This formula locks both the teachers and the students into a teaching situation where each one concerned would be required to function as he should function. According to this formula, while ranking the students it would be obligatory upon the teacher to see that he should not only do justice but should also seem to be doing so. One student may be brilliant but erratic while another student may be steady and hardworking. How is he to decide their respective merits? Whatever instrument of measurement he adopts, it will have to be a fine and sensitive one so that nothing relevant is left out *and nothing extraneous is allowed to intrude*. After all, the teacher will have to explain and defend the reasons for his judgment. His reasons will therefore have to be objective, quantifiable and verifiable. The one thing that he cannot afford to do is to be subjective. The moment he does so, he would be challenged.

When it comes to students, each of them will be looking, hawk-eyed, at each step taken by the teacher. If, for instance, a student is placed at No. 2 instead of No. 1 he would want satisfaction as to the reasons for it. He may not be the kind of student who can be easily satisfied; he may be somewhat narcissistic or

academic community as a whole is not all that dissatisfied with the examination system. This may sound ungenerous to some people but it is not really so. No system ever endures for as long as our system has endured unless it brings satisfaction to those who are involved in it. As far as one can judge, the most gratifying thing about it is that it is so easy to operate. Neither teaching nor assessment demand continuous and honest work. One can get away with a small fraction of what one would be required to do in another setting. To change the habits of work of people is not easy and no one should be under any illusion that any significant change can be made without a prolonged and persistent struggle.

To talk of working habits is to call attention to the difficulty, not the impossibility (this crucial difference deserves to be underscored), of achieving positive results. Habits of work are a product of several factors some of which cannot be changed at the stage most people adopt teaching as a career. But it is possible to change one important element in that situation: the system in which teachers and students operate.

The various proposals made here, particularly the one relating to internal assessment, are proposals which are related to the system of instruction and assessment followed in our colleges and universities. There is bound to be resistance to the implementation of these proposals in the beginning. But once the battle has been fought and the proposals have been accepted, it will not be so easy for most people to evade the logic of the new system. For one thing, these proposals are interrelated and cannot be so easily delinked from one another. For another, they are capable of generating a certain momentum of their own. Though some effort would be required to keep up the momentum, the basic viability of the proposals, once these have been accepted, is not likely to be questioned.

The two main things required to be done with regard to examinations are: one, to mobilize academic opinion; and two, to evolve a new strategy of change. The proposals made here are calculated to meet both these objectives.

Every student would closely watch how the other students are being assessed because such assessment would be intimately and directly connected with his ultimate performance. For teachers too it would be difficult to become complacent, irregular or casual. Today there is no institutional mechanism which can prevent him from going wrong or indeed regulate the rhythm of his academic functioning. As already stated, it is only in the administrative sense that a teacher is answerable and nothing is easier than to evade that kind of answerability. But once he is answerable to students in the manner described above he will have to perform regularly, objectively and conscientiously. The students will see to it, and he will have little choice except to function in terms of the demands made upon him.

This formula does not cover everything relating to the examination system. There are issues like grades being better than marks, the technique of assessment in external examinations and such other matters which have not been referred to at all. It is not that these matters are unimportant but because these are matters of detail. The focus throughout the argument has been on those issues which are basic to an understanding of the problem and which therefore cannot be sidestepped.

Nor is there anything sacrosanct or inflexible about the formula. The few minor objections to it that can be thought of can be met without sacrificing its fundamentals. As long as the basic framework of the formula is preserved, any number of changes to improve or refine it can be made. What is sought to be established just now is that the solution proposed will create a teaching and examining situation which will be totally different from what obtains today. In particular, two results will follow: one, a teaching situation will have been created whereby neither the students nor the teachers will be able to relax at any time of the year; and two, the unity of instruction and assessment will have been fully established. In consequence, the existing rigidities of the system will be loosened up and the stagnant situation that prevails in most institutions will get substantially modified.

IV

Two things may be said in conclusion. Despite what quite a number of people say to the contrary, the fact remains that the

intelligence tests are not tests of "mere memory.") In 1942, through a combination of circumstances, the College Entrance Examination Board in the U.S.A. began to shift to purely objective type examinations and other forms of modern educational testing. The results were dramatic. Alden Dunham, formerly Director of Admissions of Princeton University, italicizes this sentence in a recent article on college admissions: "*There is no doubt whatsoever that the current form of the College Board tests has been a major factor in promoting social mobility in the United States.*"¹ The older board examinations had been much like those of most Indian matriculation boards. They were essay-type examinations. The students from superior schools were specifically coached on how to pass these examinations and those from ordinary schools usually failed. Furthermore, students from upper socio-economic levels, who had been brought up by educated parents, had the linguistic fluency necessary to do well in the traditional essay-type examinations—those from poor and uneducated homes did not. But when "writing your answer in good English" was replaced by "thinking and choosing the best answer from among those listed", this linguistic handicap was largely undercut. (This is not to deny the importance of correct language—but that should be measured in examinations of language, not of mathematics or economics.) It was found—much to the surprise of many—that there were very many able students of physics, chemistry, history, civics, who were able to show their ability on the new-type tests as they had not been able to on the old. In a word, if we believe that educational opportunity (and university admissions) should be based on mental ability rather than on socio-economic status, the new-type tests have more than demonstrated their value.

There were other advantages as well. Instead of spending, say, 10 per cent of his time thinking and 90 per cent of it frantically trying to write down his thoughts, the student now spent 90 per cent in thinking and less than 10 per cent in indicating the results of his discriminant thinking. (Someone has said, though it is an exaggeration of course, that the traditional essay-type test is primarily a measure of physical stamina.) Thus the efficiency of examinations was greatly increased, and instead of taking several

¹ E. Alden Dunham, "A Revolution in Admissions", *Princeton Alumni Weekly*, 15 Nov. 1966.

Modern Educational Testing: Relevance to India

A. EDWIN HARPER, JR.

A few years ago the author had the privilege of visiting psychologists and educators in half a dozen East and South Asian countries. He found that in the fields of educational and vocational guidance, and in the development of aptitude, ability, and achievement tests, we in India are, by a wide margin, the leader in this part of the world. And yet in what we call "examination reform"—which, in many ways, is an applied aspect of the specialities mentioned above—we in India are the most backward of all. We have the knowledge and ability for good educational testing. Why has it not been applied?

The use of examinations for selection was an invention of the Chinese, more than two thousand years ago. But it was not until the beginning of the twentieth century that scientific thinking and methods began to be applied to the assessment of human intelligence. The first modern individual intelligence tests began in France about 1905. The group intelligence test, for large-scale evaluation, received its first large development under the pressures of the recruitment drives in America in the First World War. Shortly after that it came to be realized that the same objective methods which were used to assess intelligence could also be applied to measuring scholastic aptitude, ability, and achievement. (Those who think that "objective examinations" measure only memory and not thinking should ponder their origin—surely

ficant. If *all* students only guessed, then one-fourth would guess right and three-fourth would guess wrong, just by chance. Thus the maximum that any student can get just by guessing is, on the average, 25 per cent. So a student who knows nothing cannot possibly pass. In practice, however, students guess on only a few questions. Since only one-fourth of these few will be "right" just by chance, this has little effect on their marks. Furthermore, even this effect can be largely eliminated by a simple statistical correction. This correction formula reduces the marks on the guessed questions to zero.²

Many of the other objections often raised to objective-type examinations have equally simple technical answers. And incidentally, the superiority of objective over traditional examinations does not lie primarily in the mechanical objectivity with which they can be marked. It lies, rather, in the fact that many more questions can be asked in a given period of time, that the entire course (rather than just parts of it) can be covered, that the student can be forced to think, judge, discriminate, rather than just spout things memorized from a book. Nor is the examiner's judgment eliminated. The writing of a large number of questions, and selecting the best for the test, requires a great deal of highly skilled judgment. The only difference is that this judgment is applied to examination writing, and therefore affects all candidates equally. In the marking of essay-type examinations, on the other hand, judgment varies from time to time, and is applied differently to different candidates in the same examination.

Another widespread belief among those who do not yet under-

² Divide the number of questions answered wrong by one less than the number of choices per question, and subtract this from the number right. If there are five suggested answers to every question, one-quarter of the number wrong is subtracted from the number right. Suppose that out of 100 question a student knows the answers to sixty and guesses the remaining forty. Of the forty guessed, the average student would get one-fifth or eight questions right, and the rest wrong.

	<i>Right</i>	<i>Wrong</i>
Answers known	60	0
Answers guessed	8	32 (total guessed=40)
	<hr/>	<hr/>
Totals	68	32
Subtract 1/4 of Wrong=32/4=8	<hr/>	
CORRECTED SCORE	60	= answers known

weeks the American matriculation examination is now completed in a single day. At the same time its validity, as measured against subsequent university marks, has substantially increased. Thus, the time formerly wasted in examining can now go into educating which, rather than examining, should be considered the prime purpose of the university. (Is it? Someone has said, "India has no educational system—only an examination system.")

We do not mean to imply that in America *only* so-called objective tests are used. All types of examination questions have their place. However in large-scale public examinations, in England as well as in America, the efficiency of modern educational testing methods is more and more considered to outweigh whatever limited advantages the traditional examination may be thought to have.

What are these "objective-type" tests? Most Indian students have at one time or another studied Wordsworth's "The World is Too Much With Us". Try this question: from among the possible answers given, you are to select the *one best* answer.

In the line "The world is too much with us: late and soon", "the world" refers to:

- (a) the earth on which we live.
- (b) the other countries of the world.
- (c) heaven.
- (d) a spirit of materialism.

This question appeared in an English examination in our college in India. We did statistical analysis of the results (one of the incidental advantages of this type of examination), and found that almost all of the best students (as judged by their total marks on 120 questions answered in two hours) had selected answer *D*. Of the weak students, on the other hand, more than twice as many selected *A* as *D*. The weak students had only read the words literally, and so they chose the literal answers. Only the best students had understood the poem as a whole, and applied that understanding to their interpretation of this isolated line. What is required to pass this question is not just book knowledge of English Poetry—it is poetic understanding and appreciation.

It is obvious that objective-type questions can measure more than mere memory. But how about the possibility that students answer correctly just by guessing? Some students, of course, do get the answer by guessing. But this proportion is not signi-

is how to predict how well a student will do in his course. Traditional methods—high school board marks, interviews—have often proved notoriously unreliable. The failure rate in universities would not be nearly so high if these marks actually predicted well. Even where the marks of some boards do seem to be more reliable, institutions are faced with selecting students who have appeared under several different boards, with no commonly accepted standard. Thus many institutions now conduct their own admission tests. However all too often these examinations are of the same old inefficient, expensive, unreliable type as the higher secondary boards are using.

It is here that modern educational testing methods can have their most useful impact: (a) They can easily reduce three days of examinations to a single day of five or six hours, and several weeks of marking examinations to a day or two. (b) At the same time, they can significantly increase the reliability and validity of the selection process.

Two types of tests are commonly used for modern selection methods: (a) Scholastic or academic aptitude tests, which are related to what used to be called "intelligence tests". But their purpose is more specific. They attempt to measure the degree of development of those abilities which are most basic for higher education: the ability to understand, use, and reason with words, and the ability to think in quantitative terms. (b) Achievement or attainment tests, which attempt to measure knowledge, understanding, thinking, problem solving, in specific academic fields. Using multiple-choice questions, a test with fifty questions to be answered in 45 minutes, will often cover more than two three-hour papers of the traditional type, in the same subject. But even in achievement testing, the trend is away from questions based on a specific curriculum. Rather, the most modern of these tests attempt to measure developed abilities to think, reason, understand in a particular academic discipline, rather than just knowledge and understanding of a specified body of facts. And it is because of this that they are increasingly successful in predicting future achievement—which, after all, is the crux of the selection problem.

Based on both foreign and Indian research experience, these things we know: (a) that modern educational tests (both aptitude and achievement) are better selection instruments than the

stand modern testing methods is that objective-type examinations may be relevant to elementary school education, and may possibly be useful in some high school subjects, but have no applicability to higher education. The facts are quite to the contrary. The use of objective examinations at the university level is spreading steadily in both England and America, and where numbers are large they are not only used for admission to postgraduate studies, but even, in such fields as medicine and law, for certification at the highest postgraduate levels. In India they have been quite successfully used in selecting M.A. and M.Sc. graduates for further study.

RELEVANCE TO INDIA

All that we have said thus far may sound radically new to many of our readers. Yet there have been close to a hundred research articles on this subject published in India already! (See references at the end of this chapter.) A great deal of experimentation has been carried out, and the applicability of these scientific methods of educational testing to Indian conditions has been proved again and again. The tragedy, perhaps, is that most of this research is buried in technical journals of limited circulation. The use which has been made of modern educational testing methods in India is apparently quite unknown to the vast majority of college professors in the country.

Besides assessing classroom achievement, there are three major uses of educational tests which have been used successfully in India: selection, placement, and guidance. A fourth may soon be added: maintenance of standards.

1. *Selection*

It is time that we begin to substitute selective admission for selective graduation.³ When educational facilities are limited, every potential failure who is admitted implies that a potentially successful student has been denied a seat in the university. Not only are human beings thus being deprived of their potential for full development, but also the money spent educating a student who fails his finals may be largely wasted. The problem, of course,

³ I am indebted to Dr. K. K. Anand, of the Indian Institute of Management, Ahmedabad, for this particularly felicitous phrase.

and, indeed, indicates a very good level of prediction and accuracy of selection.

Several institutions (Baroda, Mysore, Agra, Sagar) have developed teacher aptitude tests, which correlate with later results at around 0.50. The selection tests used for the training course of the Bengal Library Association predict later examination results with a coefficient of correlation of 0.62, while the selection tests for the Indian Statistical Institute's M. Stat. course have correlated as high as 0.72 with later results. The Indian Institute of Management, Ahmedabad, found that a Scholastic Aptitude Test of Quantitative Reasoning alone was a better predictor of later marks than high school division, pre-university division, degree division, and their own interview ratings. The Indian Institute of Management, Calcutta had similar results with a more extensive battery of selection tests.

(b) *Prediction of later marks (and hence selection) is improved when various measures are combined.* Generally, the combination of both objective educational tests (aptitude and achievement) with previous academic record or rank in class does a much better job than either alone. The Institute of Vocational Guidance and Selection (Government of Maharashtra) studied a medical aptitude test. The correlation was 0.49 with first year marks; but when intermediate division was combined with the selection test results, the correlation with first year marks was raised to 0.57. In 1955 the Indian Statistical Institute in Calcutta admitted only first division M.Ses in mathematics or first division B.Ses in statistics to its advanced course. In 1956, when admissions were based on both aptitude tests and previous division, one-third of those selected had been second and even third divisioners. How well did they do? Of the 1955 group, which was made up of first divisioners only, 46 per cent did well on their first important examination; of the 1956 group, 74 percent did well. Thus the addition of educational tests (both aptitude and achievement) allowed the Institute to select second and third divisioners who were of better quality than the first divisioners taken on academic record alone. At the Vellore Christian Medical College, not only was the combination of aptitude tests with previous division better than either alone, but the addition of a three-day interview and personality testing procedure raised the correlation from 0.55 to 0.63. Incidentally, this correlation was with the final results

traditional examination methods; (b) that when aptitude tests are combined with school marks (or rank in class), the combination produces better selections than either alone; (c) that on the average, objective type examinations are approximately six times as efficient as the traditional type; (d) and that the validity of any selection instrument or method will vary from institution to institution, and even from year to year in the same institution.

To document these important statements fully would require a book; but within the space of an article they can at least be illustrated, from Indian research and experience.

(a) *Modern educational tests can improve the selection of students for higher studies.* Vellore Christian Medical College has perhaps had longer experience with this type of testing than any other institution of higher education in India. In the initial years, the shift to the new methods for selecting students resulted in a 26 per cent reduction in the number of years lost (through detainments) per hundred students. The figures show that "with a given amount of facilities and finance, a little better than four more students per hundred are being given a medical education since these modern selection methods were substituted for the older ones."⁴ Similarly, there was a 27 per cent reduction in the number of papers failed per student. The improvement was primarily in the quality of second and third division candidates admitted, but even the number of intermediate first divisioners who later did poorly was reduced.

T. P. Lcle and his colleagues administered a university entrance test at Baroda. A year later the correlation⁵ of these marks with first year science results was 0.68, with arts it was 0.54, and with general science it was 0.74. The last of these is near the level at which two different intelligence tests will correlate with each other,

⁴ Carman, Naomi H., Paul, Joy C., Harper, A. Edwin, Jr., Das Gupta, B., and Sangal, S. P. "A Note on the Validity of A Medical College Selection Programme," *Sankhya: The Indian Journal of Statistics*, Series B, 1962, 223-244.

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can be covered as in a five-question essay examination. In fact the usual objective examination of two-to-three-hour duration contains 200 to 300 items which would correspond with twelve to eighteen essay questions. Thus, the objective examination can cover a broader spectrum of knowledge than the essay examination in the same time period and, therefore, is the examination of choice when this is desired."⁷ In India, similar translations of essay to objective questions have been done by Vidya Sagar Misra of the University of Allahabad and others.

Several studies, including at least one done in India, have shown that even essay-writing ability—as measured by a series of essays written in college—can be predicted better with a half-hour objective test of “knowledge of English usage” than with an essay-writing examination of the same length. The Indian study, done in 1955 when English was still a medium of instruction, merely asked students to *recognize* errors in English. For example in the following sentences, write in the brackets the number of the section in which an error occurs:

X. The box/which he maded/broke. NO ERROR ()

1 2 3 4

Y. The man/went walking/in the woods NO ERROR ()

1 2 3 4

The answer to the first item is “2” while for the second, which is a correct sentence, it is “4”. There were other types of questions, also, requiring the student to select the best from several alternative possible corrections.

So far, we have discussed efficiency basically in terms of better (more accurate and more complete) measurement per unit of time. But it shows up in other, more qualitative ways also. Studies in India (particularly those of H. J. Taylor) suggest that perhaps 25 per cent of all those who “fail” in our public examinations fail because of the unreliability of the examinations, not because of actual lack of merit. Thus it is often the examination system, not the unlucky candidate, which has actually “failed”. Objective-type tests can be used to reduce the amount of time taken in examining (which is what is done in selection testing). However, if we are willing to continue examinations for the same length of time as presently, then the use of objective-type questions

⁷ Moor, Robert A. “Methods of Examining Students in Medicine”. *Journal of Medical Education*, January 1954.

five years later, not just with first year examinations; and it was with the rating, after five years of contact, of how good a doctor his or her teachers thought each student was going to be.⁶

(c) *Objective measures of achievement (knowledge, ability, thinking, etc.) are approximately six times as efficient as traditional examinations.* This figure of "six times as efficient" is, of course, only a very rough approximation. The degree to which efficiency is improved depends on many complex factors, such as subject matter, type of questions, and level of education. Perhaps a range of three or four up to ten or twelve might be more descriptive. But as an average, six seems as accurate as any.

The writer first heard of this particular figure two decades ago from Professor P. C. Mahalanobis, India's world-famous statistician. Professor Mahalanobis had experimented with objective examinations many years earlier, when he was teaching physics at Presidency College in Calcutta, and had found them to be approximately six times as efficient as traditional examinations. The writer also heard an American expert state that it would take eighteen to twenty-four hours of traditional essay-type English examinations to reach the reliability of a single three-hour objective examination in that subject—a ratio of about six or eight to one. Many other studies have compared the two types, both in terms of increased reliability and validity, and also in terms of increased coverage.

In a brilliant paper a professor of pathology in an American medical college, Robert A. Moore, translated an actual essay-type question into a series of objective questions. He showed in detail how everything covered by this single traditional type medical college examination question in pathology—knowledge, recognition of differences, description of changes, understanding of mechanisms—can be covered in seventeen objective-type questions. "If we assume that this one example is an average, this means that with 17 times five, or 85 objective questions, the same material

⁶ It is probably impossible to measure how good a doctor each student actually becomes. Brilliant student A is offered a foreign scholarship for postgraduate studies, but he refuses it because he wants to serve the poor in India's villages. The scholarship is then offered to student B, who accepts, finally settles abroad, and becomes a world-famous surgeon, while A's name remains unknown beyond his district hospital. Who is more "successful"?

the same institution. In the U.S.A., where objective tests are widely used for selection, the same scholastic aptitude test may show validities varying from 0.85 to zero in various colleges and universities. This may reflect different concepts of education, and therefore different types of ability required for success in different institutions. More surprisingly, several studies in India have shown that even in the same institution, the validity of a selection method may vary from year to year—in one case the range was from 0.75 to zero. Some of this variation may be the function of the particular group of students admitted in a particular year. However, it is at least possible that much of it is due to the unreliability of college and university examinations, than to any defect inherent in the selection instrument. In one case, an objective examination was used as the “test examination” in one paper in several schools. Shortly thereafter, these students appeared for the board examination in that paper. The correlations between the *same* objective examination and the *same* board examination ranged from +0.82 to -0.25! The reliability of the objective examination was statistically determined to be quite adequate. In the board examination, the answer books from different high schools probably went to different examiners. The point of this section, of course, is that no final decision about any method of selecting students should be made on a single experiment. Repeated research is necessary—both in traditional selection methods, and in the use of improved educational tests—before there can be any final verdict. There are enough data buried in most registrars’ office to show how valid traditional selection methods have or have not been. Statistical studies are needed of these data. It is against this background that we can assess the possible contribution of educational tests to better selection of students.

2. *Placement*

Within certain limits, there is a great deal to be said for grouping students according to ability and level of previous training. In an English class, for example, putting beginners with advanced students can result in considerable waste. The faster students are held back, often bored, and certainly not able to develop to the fullest, while the pace may still be too fast for the weakest students who, not even reaching the first rung of the ladder, may

could greatly reduce the number of candidates unfairly branded as "failures".

It should be added parenthetically that very few experts would scrap the present form of questions completely. Rather, they would advise a mixed examination, containing both multiple-choice and improved traditional-type questions. Each type can be used to assess the particular abilities for which it is most relevant, thus working towards a much more balanced whole.

Although our discussion is about the use of modern educational tests which are externally prepared, perhaps a digression on the use of these methods for teacher-made tests in the classroom is not entirely irrelevant. The simplicity with which objective examinations can be marked makes them very useful for more frequent unit tests in the classroom. (Once prepared, they can be used repeatedly. Students should be allowed to look over their mistakes, but not to keep the papers. They should be studying the course, not old examinations!) More frequent testing leads to better study habits. It has also been shown to lead to better final examination results. Students who have learned once for a unit test, a second time for a terminal, and had a third review for a final have a much better grasp of the course than those who have only crammed once.

There is a wide recognition of the need for closer student-teacher understanding. Yet any talk of reducing teacher-student ratios is probably unrealistic, given the pressure of rising population and rising educational aspirations. Objective tests do, however, provide at least some amelioration in this situation. (a) When handed back for study, they provide each individual student with a detailed picture of what his errors in thinking and understanding are—a far greater degree of individual help than is ever possible for a busy teacher using traditional-type examinations. (b) If the teacher (or the college examinations office) tabulates what questions were missed by large numbers of students, he gets a very clear feedback as to what the strengths and weaknesses of his own teaching have been, what needs further review, and so on. Thus the objective test serves as an instrument of two-way communication in a far more efficient manner than is possible with the traditional examination.

(d) *The validity of an educational selection test or method will vary from institution to institution, and even from year to year in*

these particular twenty questions, with the less than perfect probability that he has heard them exactly correctly and has heard the correct answer to each of them, we can see that the influence of such repetition on any student's marks is likely to be negligible. Statistical manipulation of the results of these twenty questions, however, makes it possible to mark the new examination to almost exactly the same standard as the examination of the previous year. Over a period of years this norm can be maintained. In 1984 we can still be marking students according to the same norm as in 1970. With present traditional examination methods, this is impossible.

4. *Guidance*

At the higher secondary level, educational tests, both of aptitude and, to a lesser extent, of achievement, are widely used in India to guide students in making correct educational and vocational choices. At present, only examination marks are used to provide such guidance at college and university levels in India. Since the reliability of examination marks is often low, they provide only a highly fallible guide. The provision of better testing instruments for guidance of students at the university level seems to be a field which is now ripe for development.

MISUSE OF EDUCATIONAL TESTS

Educational tests of the types we have been discussing are tools; they are no panacea. If they are used mechanically, they may only serve to increase bureaucratic tyranny. Educational tests as well as examination should be used as aids to judgment, never as final answers. They must be used along with other tools, measures, methods, and assessments, never alone or in isolation. But properly used, educational tests can greatly enhance human values in a democracy. They can help to uncover abilities which may otherwise escape notice because human judgment is influenced, often unconsciously, by such irrelevant factors as sex, creed, or race. They can help to equalize educational opportunity. Their introduction into the selection process can often give a second chance to a student who has fared poorly in an examination because of illness, anxiety, poor verbal fluency, the unreliability of examiners, or other irrelevant factors.

end up learning virtually nothing. The same is true in other subjects. Objective achievement tests form a quick and efficient way of finding out the level of understanding a particular student has reached in the subject. Wilson College, in Bombay, uses an English placement test to select its students for an intensive *English course*. *Isabella Thoburn College, Lucknow*, has used tests in science subjects in this way for several years. A wider use of educational tests for placement is overdue.

3. *Maintenance of Standards*

The external examination system in India is supposed to produce uniform standards. But in practice, we all know that it does not. Certain universities are known to be better than others, but there is really no direct way in which they can be compared. One problem is that, with the traditional examination system, statements about relative standards ultimately rest solely on human judgment. And human judgment is notoriously fallible. There is good reason to believe that even within a single examining body, the wide variation in pass percentage from year to year is more a reflection of the variability of examiners' judgments than of any actual variation in ability of the candidates examined.

Objective tests and examinations provide an obvious answer to this problem. Human judgment enters heavily into the preparation of the examination, but the marking and assessment are then completely objective. Thus the same examination could be administered in a large number of universities, and yet be marked with a completely uniform standard. What is more likely, however, is the use of standardized tests by teachers or department heads as a means of assessing their own work, and, if necessary, raising their teaching standards to meet a more general norm.

To maintain standards over a period of years in the same institution the same tests cannot, of course, be repeated. Students would learn the answers, and thus get progressively better results. However again statistics, that handmaiden of modern psychology and educational measurement, comes to our rescue. We have already mentioned that even used examinations should not be published—students should study the course, not old examination questions. Thus out of 200 questions in an examination, it is safe to repeat, say twenty of them the next year. When we compound the low probability of a student having heard about

Both of the above services are offered by such organizations abroad. For the third service, there is no precedent, as it is related to the peculiar situation in India where admissions must be carried out within only a week or two available between the time higher secondary results are published, and university opening dates. (3) The suggested cooperative service would provide selection testing materials for local administration, scoring, and interpretation by the college or university buying the service. New tests would have to be provided each year, because even with the best efforts the tests would probably "leak" after use. Detailed instructions would have to be provided so that scoring and interpretation could be done by college and university teachers and administrators with no background in educational measurement. It seems probable that, as the growth of population and of educational aspirations begin to make selective admissions a necessity, it is this third service which would be most widely used.

Such a cooperative testing service can build on the experience we already have in India, as well as the experience abroad. Through it the potential benefits of modern educational testing can be made available to every university, college, and technical institution in India.

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Research is needed on all methods of selection—educational tests, interviews, traditional examination marks, and so on—and they should be used only in the light of such research findings, not on the basis of arbitrary assumptions as to their reliability and validity.

A PROPOSAL

The best tests are those which are written by subject-matter experts, with the guidance and editorial assistance of an expert in educational measurement. Any university, and even a small college, can set up an examinations office to promote better educational testing. However, the pooling of knowledge and facilities has many advantages such as increasing the quality of the tests and examinations while at the same time reducing their per student cost.

What is needed is an inter-university cooperative testing service. Such an organization would be a voluntary association, serving within a single linguistic area. It would provide three types of services: (1) It would operate "secure" selection programmes, such as are now used by the Indian Institute of Management, Calcutta, and the Vellore Christian Medical College. By "secure" we mean that all testing materials remain confidential, and are the property of the organization, so that they may be used again without leakage. The cooperative service would send to all candidates, ahead of time, a booklet, describing the tests, giving sample questions, telling how to prepare. To keep the actual testing materials confidential, the organization would set up testing centres, send out the materials, have them returned for marking and scaling. The results would then be sent to the colleges or institutions, which would be free to make use of them in any way they wish in deciding on admissions. (2) The cooperative service would also develop and standardize other tests, which would be sold to any qualified user. While these obviously could not be used for selection (where any "leakage" invalidates a test), they would be very useful for guidance, placement, and even for informal "maintenance of standards" use: In the latter, a teacher of, say, psychology, would administer a nationally or regionally standardized test to his own class, to find out how his teaching compares with that of other universities.

Part Seven

Reform

Problems of University Reform¹

PHILIP G. ALTBACH

While it can be argued that India's universities have successfully provided valuable services to Indian society, for they have been an important route of social mobility and have trained the skilled manpower needed by India's modern economy, most observers agree that Indian universities need major overhaul. The nature of the 'university crisis' in India is clear from even a cursory reading of the newspapers. Disruption of academic life is endemic, there is dissatisfaction with deteriorating standards of instruction, the examination system is in a shambles, overexpansion of facilities has led to substantial unemployment of educated manpower, and the universities have become involved in factional and ideological politics. In addition, official commissions and others have tried to change the universities in the past without much success.

We have defined "reform" as planned change in universities or

¹ Reprinted from *Comparative Education Review* (16 June 1972), pp. 251-266, with permission of the author.

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meant that the Indian universities were largely affiliating and examining bodies with little intellectual life of their own.⁴ The purpose of early Indian universities as defined by the British was to train personnel to fill middle level positions in the government bureaucracy. The system thus emphasized fluency in English, understanding the functioning of the colonial government machinery, and general loyalty to the colonial regime. The curriculum was largely humanistic with little attention to the sciences or applied subjects. Those who took advantage of colonial education were confined to the very small Indian urban middle class who were attracted to it because it offered social mobility and prestigious jobs in the government. While there have been some changes in the structure of governance and in curriculum, the basic pattern of higher education in India which was set in the mid-nineteenth century remains to the present.

Indian higher education has seen massive numerical growth, despite occasional pleas from planners and official government commissions that uncontrolled expansion would have negative effects on standards of instruction, physical facilities, and employment for graduates.⁵ In the period prior to 1947, growth was modest: enrolment went from 23,000 in 1901 to 225,000 in 1946.⁶ However, between 1961 and 1971, the number of students increased from 980,000 to 2,700,000. The universities have opened their doors increasingly to all segments of the urban population (20 per cent of India's total), and recently to rural young people as well. An academic degree has become necessary for most jobs. Thus, while the value of education has changed, the curriculum offered by most colleges has not changed since the colonial period.

In short, Indian higher education has grown by accretion in the

⁴ See Eric Ashby, *Universities: British, Indian, African* (Cambridge: Harvard University Press, 1968) for a discussion of the origins of higher education in India.

⁵ The most recent, and one of the most influential pleas to limit expansion of higher education came from the Kothari Commission. See *Report of the Education Commission: 1964-66: Education and National Development* (New Delhi: Ministry of Education, 1966).

⁶ For a basic factual account of the development of higher education in India, see Philip G. Altbach, "Higher Education in India," in Barbara Burn, et al., *Higher Education in Nine Countries* (New York: McGraw-Hill, 1971), pp. 317-344.

colleges aimed at improving aspects of the academic environment. In India, these changes have generally been suggested by official commissions or committees, although they have originated at times from other sources. The discussion focuses on the "mainstream" universities—those which follow the original "London model" and which enroll some 90 per cent of India's postsecondary students. The newer institutions, such as the Institutes of Technology and the various research institutes, have been the most innovative, but they have remained outside the main current of the universities, precisely because the older institutions have been unwilling or unable to change.

This essay does not deal with the problems of educational planning to any major extent, although reform and planning are (or should be) linked. As will be noted, planning in higher education has not been either very comprehensive or successful in India, although it is by no means clear that long-range educational planning can be effective in any society.² This essay analyzes the process and problems of university reform in India. To illustrate the situation in a specific institution, the University of Bombay is highlighted as a case study.³ It is not the purpose of this essay to denigrate the achievements of Indian higher education nor to claim that it has served no useful role in Indian society; it rather focuses on some of the problems which the universities have themselves identified and the solutions which have been proposed.

Indian higher education exhibits a curious combination of organizational stability in the face of rapid growth in recent years and substantial unrest from students and, to some extent, faculty. The structure of Indian higher education is immersed in the colonial past. The four original universities were founded by the British in 1857, and the institutions that have emerged since have retained a similar organizational pattern. This pattern reflects that of the University of London, and until recently has

² That educational planning is a difficult and often unsuccessful undertaking in both advanced and developing societies is borne out in the literature. See especially Jan Tinbergen, *Development Planning* (New York: McGraw-Hill, 1967).

³ For a more detailed analysis of the University of Bombay, see Philip G. Altbach, *The University in Transition: An Indian Case Study*, (Cambridge, Mass.: Schenkman Publishing Co., 1972).

innovation, both in terms of structure and curriculum, has occurred in the new institutes.

THE HISTORICAL CONTEXT

Despite a rather unimpressive record, educational reform and planning efforts have a long history in India. The founding of the first three universities in 1857 at Calcutta, Bombay, and Madras did, in a sense, reflect the need for reform. Many educators felt that the proliferation of colleges in India in the early nineteenth century with no means of insuring minimum quality was unfortunate. The demand for British-style higher education was growing, and private Indian interests were organizing colleges to meet this demand. The universities, therefore, were established to maintain control over collegiate education and insure that minimum standards were met. In the earliest period, the universities fulfilled only examining and inspecting functions. The subsequent history of Indian higher education is the history of efforts to maintain administrative control over and minimum academic standards in the ever increasing number of colleges. Thus, reforms which aimed at diminishing the centralized power of the universities—and many have been focused in this direction—have met with firm resistance.

The first major official inquiry on university education took place in 1882 under the Indian Education Commission. The Commission, however, made few recommendations about the functioning of the universities. Due in part to an expansion of secondary education, the number of students seeking admission to the colleges increased substantially after 1882 as jobs both in government service and in the private sector opened up. The 1902 Indian Universities Commission dealt with the problems faced by the universities and recommended changes in university governance while holding that the University of London continue as the basis for Indian university organization. No fundamental reform was proposed. The 1902 Commission led to the University Act of 1904, which streamlined university governance and strengthened teaching at the university level. Nonetheless, the Commission and the Act failed to influence the direction or ethos of most higher education. In an effort to raise standards, for example, the number of affiliated colleges of the University of

past quarter century, and there has been little clear planning based on either the needs of the broader society as defined by government in the various five year plans or the wishes of the academic community. Rather, layers have been added onto the existing university system and occasionally new and innovative institutions created without fundamentally altering higher education as a whole. This is as true in terms of curriculum change as it is of structural change and growth. The core curriculum for the arts and sciences has not changed much, rather new subjects have been added and syllabi updated from time to time. Basic rethinking or change has, with few exceptions, not occurred. The universities have developed in a *laissez faire* manner despite the commitment of the Indian government to planning as the basis of economic and social development.

Higher education has developed in response to "market demands," political pressure, and other external influence since Independence. Government reports and official commissions have had some impact on various segments of the universities, but in the main they have not determined growth or direction. This trend is borne out by Glynn Wood's study of private colleges in Mysore, which shows that individual initiative and public demand were more responsible for educational expansion than government policy.⁷ Regional and other pressures have in some instances dictated the placement of new universities. In short, higher education has resisted planning, evidenced by its continued growth despite planners' pleas that expansion proceed at a slower and more orderly pace. Reform has not often been possible within most established institutions of higher education. Powerful groups within the university—faculty, college trustees and managements, university administrators, and sometimes students—have often opposed reforms because they feared that any innovation would threaten both their status and livelihood. Any change that might remotely threaten established academic jobs is resisted strongly, since employment is difficult to obtain and a great premium is placed on job security. Thus, established universities have been extremely difficult to change and most of the

⁷ Glynn Wood, "Planning University Reform—An Indian Case Study", *Comparative Education Review*, 16(2); June 72, pp. 268-281.

University Commission.) In many parts of India, the three-year college course has been adopted as policy (although the University of Bombay retains the four-year programme and has refused to institute intermediate colleges). The Commission also suggested that general education, on the American pattern, be introduced in the colleges, and it stressed graduate education as a means of creating new knowledge relevant to India's development. The Commission recommended the expansion of graduate and professional training facilities with emphasis on the growth of agricultural education. It called for the improvement of faculty salaries and suggested that they be put on a par with similarly qualified government workers. Reform of the examination system (but not a major change in it) was urged as was the adoption of an Indian language (preferably Hindi) as the medium of instruction in the universities. Finally, the Commission proposed a University Grants Commission, based on the British model, be established to channel needed funds to education and provide positive, but non-governmental direction to higher education.

There is little doubt that this Commission was the most comprehensive and most successful of the various official efforts at higher education reform in India—and its successes were limited. Its stress on the importance of higher education and the need for expansion in relevant areas was certainly achieved, although not in the way the Commission had urged. Expansion took place in every area, with greatest growth in terms of absolute numbers occurring in areas not given priority by the Commission. A University Grants Commission (UGC) was established and has played an important role in higher education ever since. Despite the fact that the UGC has not had the political power to enforce many of its recommendations, it has provided funds for new programmes in universities and has helped maintain standards in limited areas. The three-year degree course was adopted in many parts of the country and rural universities were established. But many of the other recommendations of the Commission were either not implemented or received only cursory attention. Faculty salaries were not appreciably improved until the early sixties, when the Education Commission (1964-66) reiterated the need for action. The language of instruction has changed at a very slow pace in piecemeal fashion. Hindi is the language of instruction only in the Hindi speaking areas and receives relatively

Bombay declined from 192 in 1902 to 170 in 1912. However, it rose to 207 by 1922.⁸ The Commission stressed that standards of teaching be improved and teaching was actually supposed to have improved, although the rate of failure at the annual examinations remained high. The colonial administration, for the first time, began to provide substantial grants to the universities and expressed a serious interest in higher education after the Act of 1904.

One of the most important documents of Indian higher education was the Calcutta University Commission's report of 1917. This Commission, under the chairmanship of Michael Sadler, had an impact on higher education beyond the University of Calcutta,⁹ although its influence in Calcutta itself was minimal. The University of Bombay, for example, appointed a committee to explore how the Calcutta recommendations could be implemented there. This committee made a number of suggestions and declared secondary education in the province of Bombay deficient and in need of improvement. Although its report was made in 1921, no action was taken until a Committee on University Reform was appointed in 1924. This report called for, among other things, a university campus to give a corporate identity to the University of Bombay and the strengthening of technical education. Some, but not all, of the recommendations were carried out after a long period of time.¹⁰ The main impact of the Calcutta University Commission, though, was to stimulate the expansion of universities rather than to basically change them.

The first major post-independence effort at university reform was the University Education Commission of 1948-49.¹⁰ The Commission made a number of recommendations, one of its most important being that university education should start after intermediate schooling and not after matriculation, and that the university course should be three years long. (This same proposal had been made thirty years previously by the Calcutta

⁸ S. R. Dongerkery, *A History of the University of Bombay, 1857-1957* (Bombay: University of Bombay Press, 1957), p. 51. This volume provides the most adequate summary of the University of Bombay's development.

⁹ Calcutta University Commission, 1917-1919, *Recommendations of the Commission*, Part II (Calcutta: Superintendent, Government Printing Press, 1919).

¹⁰ See *Report of the University Education Commission, 1948-1949*, Volume I (Delhi: Ministry of Education, Government of India, 1950).

Bombay, and although the scientific and technical aspects of the university's offerings were strengthened, there was no basic curricular change.

The University Act of 1928 substantially altered the structure of the institution. It strengthened graduate education and changed the institution's legislative processes by broadening the Senate to include representatives of various non-university interest groups and by increasing the number of elected members of the various legislative bodies. The next major attempts at reform in academic governance did not take place until 1953. And the 1953 Act remains essentially in force in 1971.

While modest alterations were occurring at the top of the academic structure in Bombay, substantial growth took place at the bottom. Collegiate education expanded at a rapid rate and new types of specialized institutions were brought under the jurisdiction of the University. College enrolments in Bombay expanded from 11,056 in 29 affiliated colleges in 1927 to 41,829 in 79 colleges in 1953.¹⁵ Graduate departments were established in a number of fields and the University itself assumed increasing teaching responsibilities (although mainly at the graduate level). The bulk of collegiate expansion resulted from private or local initiative; no planning or coordination was provided by the University itself. The University set standards of affiliation and examined candidates annually, but beyond that it played almost no role in the growth or development of the colleges. The curriculum, orientation, and means of administration of the affiliated colleges changed very little during the period from 1900 to 1947. Few of the official reports were concerned with the colleges, and the University did not consider planning and reform at the college level as a major responsibility.

The period following Independence brought even more rapid change and development than the preceding decades. Bombay's enrolments grew from 34,000 in 1957 to 77,000 in 1968. The University was changed from an institution in charge of colleges located hundreds of miles from the main campus in Bombay to a federative university with colleges located only in the Greater Bombay area. The post-independence period was characterised mainly by expanded enrolments, and, despite various efforts at

¹⁵ S. R. Dongerkery, *op. cit.*, p. 97.

for faculty, a task accomplished with the aid of the University Grants Commission and the infusion of funds from the central government. The Commission also stimulated thinking about planning in education at state and local levels and this resulted in several state educational plans. But the main recommendations of the Commission have not been followed. For example, the "major university" concept came under immediate attack from many academic officials who feared that their own institutions would not be selected as one of the major universities. It was also attacked as an elitist idea and proved to be politically controversial and was therefore dropped. The "autonomous college" idea came under similar criticism at the local level. Officials of colleges which felt that they had a good chance of being selected as autonomous supported the concept, while others did not. And, of course, the number of undistinguished colleges were in the majority and autonomous colleges have not been established. The Commission had almost no impact on the expansion of higher education, and its recommendation that enrolments should not increase nationally by more than 10 per cent per year was ignored. There also has not been any notable increase in the effectiveness of planning for new colleges in most parts of the country.

In addition to the major documents cited here, the University Grants Commission has been actively promoting various proposals for improvement and for reform in Indian higher education. The UGC's reports have been aimed both at providing guidelines for the universities in making their own plans and for the Commission's own programmes of financial and technical assistance to higher education. The UGC has also tried to stimulate universities and state governments to undertake their own programmes for reform, and has assisted such programmes with financial resources. The agency has been concerned with the improvement of academic libraries and has devoted substantial funds to upgrading both college and university libraries. One of the most ambitious UGC programmes has been to create various centres of advanced study at a number of universities. Under this programme, the UGC has identified various academic departments which they felt to be distinctive and named them as centres of advanced study. The UGC has sponsored studies of academic governance, aimed at stimulating universities to reform their

little attention elsewhere. A number of India's best universities—including Bombay, Delhi, Calcutta, and Osmania—retained English at all levels. General education was adopted only in a few institutions, and never achieved much importance.

The most recent full-scale investigation of India's educational problems was undertaken in 1964 by the Education Commission.¹¹ A number of its suggestions were markedly similar to those of earlier investigative groups. Improvement of faculty salaries, reform of examinations, streamlining of academic administration, and the like were all treated in both reports. The discussion of the medium of instruction shifted attention from Hindi to the regional languages, thus recognizing the political realities involved, but indicating that the language question was by no means solved. The Education Commission did propose some new reforms. It recommended, for example, that a number of "major universities" be identified and given sufficient resources so they could function at international scholarly levels and provide guidelines for the rest of the academic community. It suggested autonomous colleges so that colleges with high standards could have effective control over their own curriculum and examinations rather than remain subservient to the central examining structure of the universities.

For the first time, an official commission criticized the great expansion of higher education and recognized that academic standards were suffering and that adequate planning of manpower and other needs had not occurred. The Commission made a series of detailed recommendations concerning the limitation of expansion and the improvement of conditions. Colleges were to be established only after careful planning; the smaller colleges were to be closed, enlarged, or merged; and financial resources were to be used to improve standards.

The Education Commission has had only a limited effect on higher education, and most of its recommendations have been ignored.¹² Its most notable achievement was to raise salary levels

¹¹ *Report of the Education Commission, 1964-66: Education and National Development*, New Delhi: Ministry of Education, 1966, pp. 274-443.

¹² The Education Commission's *Report* has received a good deal of analysis. See especially, Amrik Singh, "The Education Commission and After," *Asian Survey*, 9 (October, 1969): 776-780, and Amrik Singh, "Higher Education in the Seventies," *Quest*, 72 (September-October, 1971): 71-81. Other articles in the October, 1969 issue of *Asian Survey* also deal with aspects of the Commission's *Report*.

for faculty, a task accomplished with the aid of the University Grants Commission and the infusion of funds from the central government. The Commission also stimulated thinking about planning in education at state and local levels and this resulted in several state educational plans. But the main recommendations of the Commission have not been followed. For example, the "major university" concept came under immediate attack from many academic officials who feared that their own institutions would not be selected as one of the major universities. It was also attacked as an elitist idea and proved to be politically controversial and was therefore dropped. The "autonomous college" idea came under similar criticism at the local level. Officials of colleges which felt that they had a good chance of being selected as autonomous supported the concept, while others did not. And, of course, the number of undistinguished colleges were in the majority and autonomous colleges have not been established. The Commission had almost no impact on the expansion of higher education, and its recommendation that enrolments should not increase nationally by more than 10 per cent per year was ignored. There also has not been any notable increase in the effectiveness of planning for new colleges in most parts of the country.

In addition to the major documents cited here, the University Grants Commission has been actively promoting various proposals for improvement and for reform in Indian higher education. The UGC's reports have been aimed both at providing guidelines for the universities in making their own plans and for the Commission's own programmes of financial and technical assistance to higher education. The UGC has also tried to stimulate universities and state governments to undertake their own programmes for reform, and has assisted such programmes with financial resources. The agency has been concerned with the improvement of academic libraries and has devoted substantial funds to upgrading both college and university libraries. One of the most ambitious UGC programmes has been to create various centres of advanced study at a number of universities. Under this programme, the UGC has identified various academic departments which they felt to be distinctive and named them as centres of advanced study. The UGC has sponsored studies of academic

little attention elsewhere. A number of India's best universities—including Bombay, Delhi, Calcutta, and Osmania—retained English at all levels. General education was adopted only in a few institutions, and never achieved much importance.

The most recent full-scale investigation of India's educational problems was undertaken in 1964 by the Education Commission.¹¹ A number of its suggestions were markedly similar to those of earlier investigative groups. Improvement of faculty salaries, reform of examinations, streamlining of academic administration, and the like were all treated in both reports. The discussion of the medium of instruction shifted attention from Hindi to the regional languages, thus recognizing the political realities involved, but indicating that the language question was by no means solved. The Education Commission did propose some new reforms. It recommended, for example, that a number of "major universities" be identified and given sufficient resources so they could function at international scholarly levels and provide guidelines for the rest of the academic community. It suggested autonomous colleges so that colleges with high standards could have effective control over their own curriculum and examinations rather than remain subservient to the central examining structure of the universities.

For the first time, an official commission criticized the great expansion of higher education and recognized that academic standards were suffering and that adequate planning of manpower and other needs had not occurred. The Commission made a series of detailed recommendations concerning the limitation of expansion and the improvement of conditions. Colleges were to be established only after careful planning; the smaller colleges were to be closed, enlarged, or merged; and financial resources were to be used to improve standards.

The Education Commission has had only a limited effect on higher education, and most of its recommendations have been ignored.¹² Its most notable achievement was to raise salary levels

¹¹ *Report of the Education Commission, 1964-66: Education and National Development*, New Delhi: Ministry of Education, 1966, pp. 274-443.

¹² The Education Commission's *Report* has received a good deal of analysis. See especially, Amrik Singh, "The Education Commission and After," *Asian Survey*, 9 (October, 1969): 776-780, and Amrik Singh, "Higher Education in the Seventies," *Quest*, 72 (September-October, 1971): 71-81. Other articles in the October, 1969 issue of *Asian Survey* also deal with aspects of the Commission's *Report*.

Bombay, and although the scientific and technical aspects of the university's offerings were strengthened, there was no basic curricular change.

The University Act of 1928 substantially altered the structure of the institution. It strengthened graduate education and changed the institution's legislative processes by broadening the Senate to include representatives of various non-university interest groups and by increasing the number of elected members of the various legislative bodies. The next major attempts at reform in academic governance did not take place until 1953. And the 1953 Act remains essentially in force in 1971.

While modest alterations were occurring at the top of the academic structure in Bombay, substantial growth took place at the bottom. Collegiate education expanded at a rapid rate and new types of specialized institutions were brought under the jurisdiction of the University. College enrolments in Bombay expanded from 11,056 in 29 affiliated colleges in 1927 to 41,829 in 79 colleges in 1953.¹⁵ Graduate departments were established in a number of fields and the University itself assumed increasing teaching responsibilities (although mainly at the graduate level). The bulk of collegiate expansion resulted from private or local initiative; no planning or coordination was provided by the University itself. The University set standards of affiliation and examined candidates annually, but beyond that it played almost no role in the growth or development of the colleges. The curriculum, orientation, and means of administration of the affiliated colleges changed very little during the period from 1900 to 1947. Few of the official reports were concerned with the colleges, and the University did not consider planning and reform at the college level as a major responsibility.

The period following Independence brought even more rapid change and development than the preceding decades. Bombay's enrolments grew from 34,000 in 1957 to 77,000 in 1968. The University was changed from an institution in charge of colleges located hundreds of miles from the main campus in Bombay to a federative university with colleges located only in the Greater Bombay area. The post-independence period was characterised mainly by expanded enrolments, and, despite various efforts at

¹⁵ S. R. Dongerkery, *op. cit.*, p. 97.

administrative structures.¹³ As a part of the educational and political establishment, it is not surprising that the University Grants Commission has not pressed for sweeping changes in higher education. It has aided universities in many practical ways, but has been both unwilling and unable to force the implementation of even its own fairly moderate reform schemes.¹⁴

THE UNIVERSITY OF BOMBAY AS A CASE STUDY

This section outlines briefly the development of Indian higher education since 1947. It emphasizes the wide gap between the projections and desires of the reformers and planners and the reality of academic development. The University of Bombay illustrates this phenomenon. The University Act of 1902, for example, changed Bombay's structure but not until ten years later, in 1912, the university assumed more responsibility for teaching and modestly expanded its graduate departments. The next major step was the appointment in 1921 of a Committee on University Reform, set up largely in response to the Calcutta University Commission of 1917. Among the recommendations made by the Committee were to streamline and democratize the governance structure of the university, to establish a central campus, to establish a four-year degree course for the B.A. and B.Sc. degrees, and to strengthen the technological programmes of the university. Many of these recommendations were acted on in the course of the following decade. The Committee did not bring any major administrative changes to the University of

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¹³ There are a rather large number of competently done UGC studies on various subjects. For some of the more interesting, see *Report of the Committee on Governance of Universities and Colleges* (New Delhi: University Grants Commission, 1971); *Report on Examination Reform* (New Delhi: University Grants Commission, 1962); *Medium of Instruction: A Report* (New Delhi: University Grants Commission, 1961); and *Report on Standards of University Education* (New Delhi: University Grants Commission, 1965). In addition, the UGC's reports on various disciplines, such as sociology, history, mathematics, and others provide useful information concerning these subjects and their status in Indian higher education. The UGC also provides the most accurate statistical information concerning Indian universities.

¹⁴ There are very few adequate analysis of the University Grants Commission. For one such analysis, see Amrik Singh, "The Reconstituted UGC," *Economic and Political Weekly*, 5 (August 15 1970):1377-1381.

ten-year period starting in 1960.¹⁶ The recommendations of this committee were influenced by the Radhakrishnan Report, but the political situation in Bombay changed substantially in the following years and the idea of Hindi was dropped as the medium of instruction. Agitation for a separate Marathi-speaking state eventually resulted in the creation of Maharashtra in 1960. Marathi-speaking elements in the city and state pressed for Marathi as the medium of instruction. However, Bombay's large Gujarati-speaking minority, along with other minority groups, strongly opposed it. Students preparing to enter Bombay's flourishing commercial life wished, by and large, to retain English, since it carried the most prestige in the stiff competition for jobs.

As a result, the University found it impossible to reach a decision and the language question, unresolved, was pushed to the background of academic discussions. English remained the sole medium of instruction. With the emergence of the "three-language formula" (the regional language, Hindi and English) as a popular slogan at the national level, the University of Bombay again reconsidered the language question. Under the leadership of Vice Chancellor Gajendragadkar, the University of Bombay in the past few years has reached a consensus: students have several options as to which language they wish to be examined in; they can choose either English, Hindi, Marathi or Gujarati. The colleges conduct classes in any of these languages. This policy is a compromise between various elements of the Bombay community. The majority of the student population in Bombay is Gujarati, reflecting the wealth and commercial position of the Gujaratis, while the majority of the faculty is Marathi speaking. Large numbers of students wish to continue to use English. The state government, for political reasons, has pressed for the use of Marathi in all aspects of education and government. The University of Bombay, therefore, has tried to satisfy the various elements demanding that it take a position on the language question. As the new formula is scheduled to go into operation in 1971, it is as yet impossible to assess its success.

The University of Bombay's response to the language question indicates the combination of elements involved in the decision-

¹⁶ *Report of the Committee on the Medium of Instruction to be Adopted in the Bombay University* (Bombay: University of Bombay Press, 1955), pp. 31-32.

long-range policy making, University authorities had little to say about how higher education developed in Bombay. Much of the expansion at the University of Bombay can be attributed to the growth of an articulate middle class which demanded academic degrees for upward social mobility.

The only area of expansion which was even minimally controlled by the University of Bombay was graduate education. The graduate departments were enlarged during the fifties and sixties and a number of new departments were added. The bulk of expansion took place at the collegiate level, and here the University exercised almost no control. The growth of arts and science colleges in the suburban areas was phenomenal, and a number of specialized colleges were founded, particularly commerce colleges. The founding of these colleges was dictated largely by the demand for access to higher education by upwardly mobile Indians in the localities in which they were established and the availability of funds from various private groups. Once a college reached the planning phase, the University found it almost impossible to withhold affiliation, even if the new institution was substandard in its facilities or teaching staff. Political and other pressures were brought to bear by the groups seeking collegiate affiliation, and the University usually did not wish to press the fight. Between 1957 and 1970, the number of affiliated colleges increased from 31 to 62. No master plan for collegiate education was ever attempted and little concern was publicly expressed by University or government authorities concerning the expansion of colleges in the city or the effect on higher education that this expansion would have.

Several other issues which faced the University of Bombay in recent years also indicate something of the nature of decision making in the institution and the difficulty of effective academic planning. The language issue has been particularly explosive for Indian higher education, and has been of special concern in a cosmopolitan and multilingual city like Bombay. The University of Bombay has considered the language issue since 1950 but has not been able to decide it. In 1955, a Committee on the Medium of Instruction to be Adopted in the Bombay University was appointed and, after much deliberation, it strongly recommended that Hindi be adopted as the sole medium of instruction in the university; the process of changeover was to take place over a

students, that the curriculum was adequate, and that morning college students did as well as others in the annual University examinations. The morning colleges were defended by college principals and officials of the institutions which conducted them, by some members of the University's legislative bodies, and by a number of political leaders in the city. One of the key supporters of the colleges, a member of the Senate and a longtime opponent of the Rector, applied pressure on the Minister of Education, and the state government, after some recrimination, took a position in defence of the morning colleges. The battle became, in part, a conflict between the opponents and supporters of the Rector. The final result represented a defeat for the Rector and the University administration: a compromise was reached in which the morning colleges were retained, but were moved to the evening and their programmes were strengthened. The deciding factor was the intervention of the Minister of Education in defence of the morning colleges.

The University of Bombay, like other Indian universities, has responded to political, social, and economic pressures in charting its path during the post-Independence period. Politically articulate elements have pressed for continued expansion and the institution, with government prodding, responded. Language proved to be a knotty problem, and the university refrained from taking a clear position until the matter was settled at higher levels. The process of academic planning in Bombay, both in the colleges and at the University, has been subject to these and other *ad hoc* influences and has not generally been very successful. As this analysis of Bombay indicates, the university is directly and integrally involved with politics. It has been even less insulated than universities in industrialized countries. The wider implications of academic planning are not often considered in making decisions.

THE PROSPECT FOR REFORM

Why have attempts at educational reform and planning been ineffective in India? Higher education in pre-industrial societies is linked closely to broader social problems. The state recognizes this and in India almost all the universities' operating funds not obtained from student fees come from state or central government sources for they look to education as the panacea for problems of

making process. National influences favouring the adoption of Hindi and later accepting regional languages as the basis of the educational system had some role. The main forces, however, were the state government, the political situation in Maharashtra at the time, and the internal politics of the university. The University of Bombay is the only university in Maharashtra which has not shifted to Marathi at the collegiate level. This signifies the substantial power and autonomy that the institution itself possesses. The outcome of the language question in Bombay, though, is clearly a political response and the academic merits of the various solutions did not enter meaningfully into the discussions. The kinds of political processes at work in Bombay concerning language can be seen in other Indian universities on a whole gamut of issues.

A final example of local decision-making further illustrates the forces impinging on academic policy in Bombay as well as in other Indian universities. During World War II, several Bombay colleges started part-time courses for working students in an effort to experiment with part-time higher education and provide educational opportunities for working class young people. These "morning colleges," as they came to be called, proved popular with students and financially advantageous for the colleges running them because it was possible to double enrolments without expanding facilities. The University administration, however, was never enthusiastic about the morning colleges, and in 1960, under the leadership of Rector G. D. Parikh, began to consider abolishing them. A report was issued by the University which argued that the colleges had inadequate standards and should be ended.¹⁷ The battle lines were drawn, and the struggle over the abolition of the morning colleges took place with substantial publicity in Bombay newspapers.

The Rector, with the support of some college principals (mostly of the more prestigious colleges which did not conduct morning classes) and some members of the University senate and syndicate argued that morning classes should either be abolished or substantially changed so that students could spend more time obtaining their degrees. Defenders of the morning colleges argued that they were a primary means of social mobility for working class

¹⁷ G. D. Parikh, *Reorganization of Undergraduate Teaching in Arts* (Bombay: University of Bombay Press, 1961).

able individuals manning academic positions, the overall quality and direction of the entire university system suffers.

The society of scarcity also has another important effect on the ability of the Indian university to adapt and reform itself. Jobs are universally scarce in India and a secure position is a matter of great importance. This means that the very large majority of college teachers and university faculty hesitate before undertaking or recommending any policy that might threaten their jobs. In addition, the appointment of teachers and other university and college staff often has political overtones, since each appointment is a critical matter to many individuals who cannot easily find other remunerative positions. Academic systems everywhere are notoriously conservative and slow to change, but in India this general trend is enhanced by the unwillingness of most people to risk their jobs. And almost any meaningful innovation or change in policy involves some risk to someone in the academic structure.

The structure and traditions of the Indian university substantially inhibit academic change. The Indian university structure, copied from a colonial model, is so centralized that decisions on many levels have to be filtered through the top levels of the institution. Colleges have very little authority to make decisions for themselves and the universities are still centralized and exceptionally bureaucratic. Decisions must go through many levels of both the universities' administrative and legislative bodies, and the lower levels have little power, a situation which intensifies feeling of frustration. Often those interested in innovation and change become frustrated at the bureaucratic structures and obstacles within the system and retreat into apathy after a few unsuccessful attempts at improvement.

The existence of particularly powerful individuals within the academic structure creates difficult problems. The role of the college principal, for example, is a key one for change at the collegiate level.¹⁹ The principal has almost complete control over the academic life of his college and, if he is uninterested in new ideas or innovation, there is little likelihood that change will occur. The teaching staff has little control over the college and often very little job security. Similarly, at the university level,

¹⁹ Philip G. Altbach, "Bombay Colleges," *Minerva*, 8 (October 1970), pp. 526-529.

manpower training and social, economic, and political development. For example, Indians have looked to their universities to create a nation out of diverse linguistic and religious groupings.

Higher education in a democratic developing country is subjected to even greater pressures than in more authoritarian nations. The political structure is influenced to some degree by public opinion and the demands of articulate segments of the population. Educated Indians have been particularly insistent that higher education be available to large numbers of young people from the urban middle classes as well as from rural areas. This pressure has been expressed in the founding of new colleges by private sources as well as in political demands on the government to provide more educational facilities. The government finds it hard to resist these demands particularly when it is not too expensive to provide collegiate education. The Indian middle class has not yet realized that the increasing size of the universities and the growing proportions of educated unemployed people are directly linked, and that an oversupply of graduates in the long run probably does not serve their needs. The pressure from the articulate public continues and the government, to varying degrees, responds by aiding or at least permitting the expansion of higher education. When academic officials protest, they are generally not effective in having their positions upheld by the government.

India is a society of scarcity. Resources are insufficient for all of the many projects which compete for funds and skilled manpower. Given this situation, there is neither enough money nor qualified teachers to permit both quantitative growth and qualitative improvement in higher education. Since the decision, if only by default, has been in the direction of quantitative expansion, it is not surprising that standards of instruction, library and other facilities, and salaries should be insufficient. Just as important is the expansion of the teaching profession—from 54,853 in 1961-62 to 104,494 in 1969-70. This has meant that highly qualified and motivated college teachers are simply unavailable and the academic preparation of the teaching profession has dropped to some degree. In addition, the best qualified are not generally attracted to college teaching because of deteriorating conditions and relatively low salaries.¹⁸ Without the most

¹⁸ See Edward Shils, "The Academic Profession in India", *Minerva*, 7 (Spring 1969), pp. 345-372.

university funding agency and the state Public Service Commission, which must make academic appointments, have been directly involved in politics.²¹ Other states are content to supply overall guidance but leave actual governance to the institutions themselves. The central government also has some power over the universities and the wishes of such central agencies as the UGC and the state government often create conflicts for university officials who must balance the various elements which impinge on them.

Related to the role of government agencies in higher education is the politicization of academic decisions in recent years. This is obvious from the foregoing discussion, but it is nevertheless important to consider seriously. As has been noted, academic appointments on many levels, from the vice chancellor down to clerks in university and college offices, are open to political scrutiny and involvement in many states. Such involvement lowers standards and morale in the colleges and universities. The number of cases in which political considerations have been infused into decisions on hiring staff is quite large and is well documented. Government involvement is also evident in other decision-making and has an impact on the nature and kind of reform possible in India. The sites for colleges or even new university campuses often are selected only after government consultations. Academic decisions on questions such as the medium of instruction become politically charged issues.

The politicization of Indian higher education is intertwined with internal politics. In a number of cases, internal factionalism has literally torn academic institutions apart and made normal university life, not to mention plans for reform or innovation, completely impossible. Among the more well known cases of this type of local political disruption of the universities are Allahabad and Banaras Hindu universities.²² Sometimes the basis

²¹ For a sensitive discussion of the politicization of Indian higher education, focusing on Bihar, see Amar Kumar Singh, "Academic Politics and Student Unrest," in P. G. Altbach, ed., *Turmoil and Transition* (New York: Basic Books, 1969), pp. 204-240.

²² For more information on these two institutions see, Joseph DiBona, *Conflict and Change in the Indian University* (Durham: Duke University Program in Comparative Studies on Southern Asia, 1969) on Allahabad University and *Report of the Banaras Hindu University Review Committee* (New Delhi: Ministry of Education, Government of India, 1968).

the positions of vice chancellor, rector (in a few institutions), and registrar are especially powerful. Where top university officials wield their power in an authoritarian manner, as is common, change is difficult if not impossible. The legislative structures of the universities—senates, syndicates, academic councils, and other such bodies—are not only cumbersome and slow moving, but often dominated by senior administrative officers at the college and university level. The failure of prestigious and well-financed commissions and agencies like the University Grants Commission to have a major impact on the operation of the universities indicates the entrenched nature of the university structures.

The question of external influences on Indian higher education is complex. On the one hand, many university spokesmen have strongly argued that there should be increased academic autonomy.²⁰ On the other hand, few have argued that the government should not influence university policy and have a key role in setting academic goals. One of the problems of government-university relations in India which has an effect on academic reform is the various levels of government which have some authority over higher education and specific universities. Higher education is a "concurrent" subject in the Indian constitution; this means that both the central government (mainly through the University Grants Commission) and the states are directly involved in academic affairs. The bulk of authority over the universities rests with the states since they supply an extremely large proportion of university funds. The chancellor, who has a largely ceremonial function but who does have some residual powers, is generally the governor of the state in which the university is located, and in many areas vice chancellors are appointed only with the approval of the state Ministry of Education.

State governments deal with universities in different ways—in some states, politicians are actively involved in academic affairs and in the internal workings of the universities. A good example of this is the state of Bihar where many of the universities are highly politicized and demoralized. Bihar's ostensibly non-political

²⁰ See S. R. Dongerkery, *University Autonomy in India* (Bombay: Lalvani, 1967), for a classic statement of the position for increased autonomy.

only in India several elements are added such as the great fear of losing jobs or carefully gathered fiscal or other resources. University structures around the world are constructed to maintain stability and inhibit change. Most universities function on the principle of gerontocracy, with senior faculty holding overwhelming power. India is no different in this regard either and is perhaps even more gerontocratically oriented, since it is reinforced by Hindu tradition. University organizational structures are notably slow to move and are based on the idea that a consensus, at least of the senior faculty and administrators, should be obtained before major changes are made. Again, India is very much in line with international standards and indeed is probably structured in an even more complex fashion than the universities in most other countries. From commentaries on academic reform in most countries, it is evident that the universities themselves are not usually in the vanguard of change; here also India is no exception. In a number of European countries and in the United States, student pressure has created demands for university reform and has sometimes obtained results. In India, where student "indiscipline" is often sporadic and seldom directed at constructive reforms, this has not generally been the case. In short, Indian universities are afflicted with the internationally observable conservative tendencies of universities, and in some respects are even more conservative than their counterparts in other countries.

What, then, are the prospects for academic reform and planning in India? The questions of educational planning and academic reform must be separated. Effective planning, particularly on a long range basis, is an extremely difficult process and in few countries has it been effective. It is, therefore, not at all surprising that India should be less than completely successful in the post-independence period. A much more practical possibility, therefore, is university reform.

There is general agreement on the need for reforms, and a consensus on some of the specific aspects of the university system which need change. Many of these elements have been discussed in this paper. Yet, meaningful reforms, however moderate, are bound to experience difficulties in the Indian context. All the powerful elements in the academic equation are arrayed against reform and change. Perhaps the main hope is that if those few

of internal politics is caste, language, religious, or regional affiliations of factions of the academic staff or students. Other times it is based on the actions of a particular vice-chancellor or dean. In almost all cases, the problem of holding onto scarce jobs or resources is involved. All this means that almost every decision occurs in an atmosphere of controversy in which academic considerations are frequently ignored. The outcome of any question often is a compromise satisfying to various factions, but lacking in meaningful change.

Related to the failure of planning and reform in Indian universities is the limited success of planning in the society at large. Although India has been committed to the concept of a planned society based on socialist principles for two decades and has drafted and partly implemented a number of five year plans, it is generally agreed that the overall planning effort has not been successful on all levels. Education has certainly been one of the notable failures of the various plans. Expansion has occurred, but it has not always been in the directions advocated by the planners. The existence at present of massive unemployment of university graduates is an admission of this failure. The academic institutions themselves have not taken the goals of the planners very seriously and there have been few rewards (or penalties) for non-compliance with the plans. The overall problems with social and economic planning in India, combined with the notably poor record of education in this area, makes the difficulty of academic changes and reform more understandable.

The final reason which helps to explain why Indian universities have been so resistant to change is related to the general nature of academic systems rather than to the specific Indian situation. Universities are notoriously difficult institutions to change, and problems of academic reform have perplexed university authorities and government officials alike, particularly in the turbulent decade of the 1960's. The fact that academics are notably conservative in their attitudes toward institutional change in many societies has created a massive obstacle to academic reform.²³ Indian academics are no different than their foreign compeers,

²³ For analysis of the American situation, see Seymour Martin Lipset, "The Politics of Academia," in D. C. Nichols, ed., *Perspectives on Campus Tensions* (Washington, D. C.: American Council on Education, 1970), pp. 85-118.

Part Eight

Science and Higher Education

visionary individuals working within the academic system are permitted leeway and given resources, successful innovations carried out on a fairly small scale may have some impact elsewhere. Thus, the concept of the autonomous colleges and the centres of advanced study are quite useful. Overall, the historical development of higher education in India does not give much cause for optimism, nor does the current political situation, both with regard to government and other external authorities and with regard to the universities themselves.

Universities and Scientific Research

A. RAHMAN

The promotion of science by Indian universities may be divided into three phases. In the first phase which lasted till 1947 science departments were established in the various universities, though the effort was slow and initially limited. The characteristic feature of this phase was lack of promotion of applied sciences and technology and of research facilities. The second phase begins with Independence when there was considerable increase both in the number of science teaching departments and the number of universities. During this period special attention was given to the teaching of technology typified in the efforts of the All India Council for Technical Education and the establishment of Indian Institutes of Technology. Some attention during this phase was also paid to the promotion of research at the universities. The chief features of the third phase are the establishment of agricultural universities, institutes for research in medicine and establishment of advanced centres of research at the universities.¹

In the early stages of development, universities were concerned primarily with teaching. The tradition of research was being developed around the survey departments and other agencies of the Government of India. Prominent amongst them were the Geological, Botanical and Zoological surveys, whilst amongst the

¹ See for details: Scientific Research in Indian Universities, Survey Report No. 6, SPSR Unit, CSIR, 1965.

being supported by various agencies. The exact nature and value of much of this research is not yet known.

II

The increase in the number of universities and science departments in them has resulted in a manifold increase in the intake and output of scientists. The output of Indian universities in different subjects has been compared with that of the USA in Tables I and II. The relative emphasis given to different fields of science, engineering, technology, medicine and the humanities as compared to some of the other countries would be evident from Table III.

It would be worthwhile to briefly mention some aspects of this expansion. The large expansion in student population by and large is at the undergraduate level and in affiliated colleges. The affiliated colleges proliferated particularly after Independence. They cover degree courses in science as well as engineering and medicine. They are run by private bodies representing different interests, religious groups as well as different sections of the community within a religious group. Though they are run by private bodies the bulk of their finance is met by government grants. The teacher-pupil ratio is particularly disproportionate in these colleges and laboratory and library facilities poor.

The number of postgraduate students has not yet increased as quickly as the undergraduate population. The number of research students has increased even more slowly. The expansion has occurred largely in the classical branches of science and in particular limited areas in them. An unmistakable result of rapid expansion, as described by the Education Commission, has been a decline in standards of higher education.⁴ This is said to be due to several factors: the lack of corresponding growth in laboratory and library facilities, few opportunities for student-teacher interaction, poor student facilities in colleges and emphasis on passing examinations as the main objective of studies.

The organization of undergraduate degree courses has also undergone changes. While some universities continue with the system prevalent before Independence, others have introduced a

⁴ *Education and National Development, Report of the Education Commission, 1964-66.* (New Delhi: Ministry of Education, Government of India, 1966), p. 278.

departments were those of agriculture, industry and health and the army with its engineering and medical corps. Besides, scientific associations and societies, such as the Asiatic Society of Bengal, Indian Association for the Cultivation of Science, and Indian Institute of Science, also contributed to the promotion of scientific research.²

The universities, however, even in the very early stages of development produced some outstanding men of science who contributed substantially to the promotion of science and scientific research. It may, however, be mentioned that despite the contribution of these savants and their standing in science, they were out of tune with the general character of the universities which were, by and large, interested in the humanities and what could be called classical education.

A major shift in the attitude to scientific research in the universities appears to have developed with the creation of facilities for postgraduate studies. This was facilitated by the creation of postgraduate fellowships by benefactions, endowments and research grants by industrialists. Limited though these were to begin with, they were successful in establishing nuclei for research. The war brought university teachers closer to the problems of applied research, and grants from the then government for short-term applied research made a decisive change in the organization of research and establishment of centres of research in the universities.

The Council of Scientific and Industrial Research (CSIR) was one of the first agencies to promote research in the universities by providing fellowships and other assistance for academic personnel. This policy was adopted by other national agencies, like the Indian Council of Agricultural Research (ICAR), the Indian Council of Medical Research (ICMR) and the Atomic Energy Commission (AEC) and helped to develop research on a wider basis. With the establishment of the University Grants Commission (UGC), a definite policy for research in the universities was evolved. Scientific research was placed on a firm footing and the universities were drawn into the national complex.³ The picture today is that universities are conscious of research, and much of it, besides what is part of the postgraduate studies, is

² *Ibid.*

³ *Ibid.*

conducted by Ph.D. candidates. The second category is scheme research. This type of research is proposed by the departments and approved and funded by various science agencies in the country, like the Council of Scientific & Industrial Research (CSIR), Atomic Energy Commission (AEC), or the Indian Council for Agricultural Research (ICAR). The third is that which is carried out by teachers as part of their interest in a specific field. Data on the proportion of each category of research are not available. Besides, there is considerable overlapping among different categories. For instance, a teacher interested in a problem in the field of his specialization may get a scheme approved and ask a student to work on it. The student may incidentally get a Ph.D. for it.

Data on the total investment on university research or on the support to research in different branches of science are not available.

The sources of research funds suggest that much of the research activity is due to funds made available by central agencies such as the CSIR, AEC, ICMR, ICAR, UGC, and to a small extent, state governments, industry and other donors. A study of 25 universities for which data were available shows that the CSIR provided by far the greatest support. The study, now several years old, revealed that 45 per cent of chemical research, 22 per cent research in physics, 11 per cent of biological research, and 22 per cent of it in other branches of sciences, was supported by the CSIR.⁵ Other sources of support of research have been agencies of the United Nations and U.S. aid programmes funded by Public Law 480. In addition to these, many American agencies like the National Bureau of Standards and some universities have also sponsored specific programmes. The exact data or the extent of this help are however not available.⁶

The general impression one gets is that the financial resources of universities are meagre, and what is available is hardly sufficient even for teaching courses. Research work which is being carried out is supported by laboratory funds for teaching or sponsored through grants from different agencies. The present

⁵ Scientific Research in Indian Universities, Survey Report No. 6, SPSR Unit, CSIR, 1965, Table 13.1, pp. 75-87.

⁶ Foreign Assistance to Scientific Research in India, An Analysis: Survey Report No. 7, Research Survey & Planning Organization, CSIR, 1966.

three-year degree course, with a one-year pre-university course. Further, there has not been any marked shift from the earlier practice with regard to the combination of subjects a student can offer for a degree course. Finally, teaching and research have continued to be predominantly on traditional lines, centred around a department. A few universities have started using the semester system and put their students through internal evaluation, but all these developments are of recent origin and need to be watched.

In all these matters the role and responsibility of the UGC has to be referred to, if not examined in detail. While a good deal of the expansion that has taken place at the college level has come about largely as a result of state or private enterprise, the role of the UGC at the postgraduate level is crucial. Though firm data in regard to the help extended to affiliated colleges and university departments are not so easily available, it is quite clear that a considerable part of this expansion could not have taken place but for the support extended by the UGC. This support has taken the form of providing space, laboratory equipment, and the creation of a large number of posts, particularly at senior levels.

It is also relevant to enquire about the extent to which this support has been academically productive. Without in any way under-rating the usefulness of the role played by the UGC it must be acknowledged that all that it has done is to respond to requests for additional support. It has not, it seems safe to say, concerned itself with the problems attendant upon large and, to some extent, indiscriminate expansion. For example, to what extent have syllabi in the various science subjects been upgraded? Or, to what extent has the rigidity of studies been modified in any meaningful way? Are most science students not still studying the same combination of subjects that they have studied for at least half a century? How far have interdisciplinary studies been encouraged and promoted? How have teaching and research been brought nearer each other so as to break with the traditional gap between the two?

III

Research in university science departments is organized predominantly at the discretion of the head of the department and generally falls under three categories: the first category is research

mental. They are also aimless and therefore often useless."⁸

Another professor, analysing the development of physics says: "A cursory look at these achievements will immediately suggest that India's performances in the field of Physics has been extremely poor. Even in the field of Theoretical Physics, it has been far from satisfactory. The experimental work has been of mediocre character. In the field of technique it is very near zero. With the sole exception of BARC, where there is some indication of successful copy of a few decades old techniques, the universities and teaching institutions have almost no inclination towards technical work."

The reasons for the state of affairs, according to him, are :

- (a) Poor academic maturity of workers and leadership;
- (b) Lack of inclination for related technical development;
- (c) Lack of initiative on the part of workers to take up work in related branches even if these be very close to the branch of their initial training;
- (d) Most of the research work in our country has been instrument or methodology oriented rather than purpose oriented.⁹

The general consensus arrived at the conference was:

Although the outlay on physics research has increased six-fold in the last decade, there has not been a significant impact of these researches on the competitive international level barring a few exceptions. Only a few viable groups have emerged and certain schools developed in a few areas in physics such as field theory, particle physics etc. Unfortunately, these fields are not of immediate relevance to the needs of the country.¹⁰

Similar implied criticism was made with regard to chemistry at the Conference for Chemistry.¹¹ What is valid for physics and chemistry, probably applied to other branches of science as well.

⁸ *Conference of Physics Education & Research* (Srinagar, June 1970), Pre-conference papers, p. 103.

⁹ *Ibid*, pp. 71-72.

¹⁰ *PI*, p. 40.

¹¹ *Chemistry, Design for Innovation*, Bangalore, 1969, hereafter quoted as CDI.

situation regarding funds for research in the universities was summed up at a seminar in the following words:

It is indeed alarming to note that the money per research worker in the university allotted in this country is appallingly low and is nearly in order of magnitude lower than that allotted in countries such as the USA, UK and Canada. Indeed it is remarkable that research could be carried out with such meagre resources. Even in India, the expenditure per research worker in some institutions like the Tata Institute of Fundamental Research is 7 to 8 times of what is available to a research worker in a university.⁷

Some characteristics of research at the universities carried out in two studies by the Research Survey & Planning Division of the CSIR reveal certain features, some of which would be evident from Tables IV to VI. The data reveal the limitation of research to a few fields in each branch, in each university. Most of the papers published have two authors. It could not be verified if the two authors were the head of the department and a member of the staff or a Ph.D. student. The papers are generally published in Indian journals, though some departments of a particular university consistently publish in journals outside India. A large number of the publications are in proceedings of various symposia, including those sponsored by the Indian Science Congress. It is interesting to note that not all the departments of a university have a high index of research publications.

It is difficult to evaluate and determine the quality of research work. The citation of the research papers published could be a good index of the value of papers. Since this has not been done, the only way to comment on the nature of work carried out at the universities is to quote the opinion of workers in a specific field. Some of the papers submitted to a Conference on Physics Education and Research throw some light on this aspect, and it would be worthwhile to quote them:

According to one physicist, "The researches being done in most physics departments are, in practice, not basic, but are develop-

⁷ *Physics in India, Challenges and Opportunities*, Srinagar, 1970 hereafter quoted as PI, p. 54.

contacts. There is, however, increasing realization of the need to break the isolation of universities and specific proposals have been made in this direction.¹³

Many universities recognize the national laboratories of the CSIR as a place for postgraduate research for which purpose a number of research workers of the laboratories are recognized guides. In a number of places where laboratories and universities coexist, the laboratory staff may be invited to deliver special lectures, and the help of the laboratories is sought in running technological courses. There is, however, no largescale collaborative effort in research between the universities and research institutions.¹⁴ A few departments have a tradition of applied work, and members of the staff of the department may act as consultants to industry, but by and large, the contact with industry hardly exists. The existing situation was described at the Conference on Physics. According to its report:

There are hardly any points of contact between the university department and industry, and what is even worse, between university departments and industrial research laboratories. These are looked upon as watertight compartments with the result that industry in the country does not benefit from the excellent creative human resources available in the country and depends, therefore, for improvement of technology, on foreign collaboration and on research and development done abroad.¹⁵

In view of the prevalent notions about applied work, and the existing situation, special effort is necessary to break the isolation of universities and to bring them within the framework of total research in the country as a whole. In this context the recommendations made by the Physics seminar at Srinagar need to be pursued and put into practice.¹⁶

¹³ For instance by the Seminars on Physics & Chemistry, mentioned earlier.

¹⁴ *A Study of Selected Laboratories and Departments of the Council of Scientific & Industrial Research*, Battelle Memorial Institute, 1965.

¹⁵ PI, pp. 46-47.

¹⁶ PI, pp. 56-57.

The factors which tend to impede research as suggested by various workers and seminars are lack of secretarial assistance to staff members, inadequate library facilities and documentation, workshops and such other common facilities. Other factors which affect considerably the conduct of research are stated to be the paternalistic organization of departments leaving little room for initiative to junior faculty members, overloading the latter with teaching load and limiting the facilities for research, inbreeding, size of the faculty which seriously limits the possibility of viable effort and wastage of resources due to the spreading of effort over a wide area. What the Education Commission had to say about this situation deserves to be quoted:

The hierarchical concentration of authority within the departments and colleges, the atmosphere of distrust between senior and junior teachers, the cynicism about administrative authorities, the unseemly conflicts about offices and positions and the attitude of envy towards persons of superior attainments—all have contributed to the deadening of the spirit of intellectual curiosity and adventure. Some of the members are diverted from intellectual concerns into intrigue and conflict over the small administrative or financial prizes by the Indian academic life. On top of all this, the bureaucratic structure within which research has to be done, the dependence on approval of indifferent superiors, the elaborate procedures through which equipment made abroad has to be obtained, the difficulties in maintenance and repair of equipment . . . and in establishing contacts with researchers working on related subjects, have all had a depressing effect on the morale of leaders and on the quality and quantity of their research output.¹²

IV

The contacts of universities with other research institutions and industry vary from university to university. While the affiliated colleges may have no such contacts or only limited ones, a university department, depending upon the location of the university and the professor and head of the department, may develop some

¹² Education and National Development, *op. cit.*, p. 278.

engineering colleges in the current increase of unemployment of engineers is any guide, is probably also meant to act as a shock absorber of the institutes of higher learning in times of crises.

It may be stressed here that the policy of elitism may produce further social tensions. If pursued in the existing climate, it may lead to conflicts with vested interests, petty intrigue and intense rivalry in universities, as has been pointed out by the Education Commission. Instead of promoting excellence it may result in intensifying these features. Restriction of admissions and channelling funds liberally to a few elite institutions may lead to student unrest directed against these institutions, as has happened in some overseas countries.¹⁷

Some of the major aspects of reform could be the abandonment of the doctrine of specialization, as was suggested by Pippard and others.¹⁸ According to them, narrow talents find little practical use, since the general education is thin. Consequently, the first stage in science education could be a more generalized course to give an insight to students into science, its methods, scope, value, as well as its limitations and dangers. The authors have suggested a programme centred round three basic themes, world picture, nature of the scientific method and technology and its part in modern society. The second stage would be of providing more intense specialization in a field. Such a suggestion is based on two considerations. The exponential phase in scientific research is already over, and the demand for research workers is likely to decrease. Secondly, in view of the new responsibilities taken over by the governments of controlling and directing technology and social change, the need for generalists is likely to be more.

These suggestions merit detailed examination particularly for their implications. Their relevance to the Indian context lie in the integration of science with culture—a major task before the Indian scientists. The traditional culture in India is not sympathetic to science with the result that the values and conclusions of science do not find wide acceptance, and hence are not practised. Even a large majority of scientists show considerable ambivalence. The need of linking science with culture would require a major

¹⁷ This has been pointed out by Lord Broaden in his article on 'Crisis in the University', *Advance*, 6, April 1969, pp. 4-10.

¹⁸ *Nature*, 228, (1970), 813-815.

V

It is evident from the preceding discussion that there is need for change. Yet one is left with the impression that the reappraisals made are not thorough besides the fact that they do not adequately respond to the fast changing situation. Further, the changes suggested are more in the nature of minor adjustments in the present system and are not likely to meet the demands being made on universities. Some of the changes may be welcome, such as democratization of administration, rotation of the headship of a department among the senior staff, while others like the emphasis on elite professors, departments and universities may generate pressures which may vitiate the existing atmosphere. However, certain basic questions like the need of a department as a basic unit of science in universities and specialization as a basic feature of university teaching have not been questioned at all. The role of the universities in social transformation is recognized by educationists but is not reflected in the proposed plans. Similarly, the integration of science with culture is emphasized, but this emphasis is also not reflected in the proposals made. In addition, the major limitation appears to be the absence of a 'suitable machinery for a continuous evaluation of programmes implemented and for the study of the problems thrown up during the implementation of new ideas. Some of these points are discussed briefly in the paragraphs which follow.

The basic question which has to be faced is whether higher education is a general need or not and whether it has to be directed to meet specific manpower needs in specialized areas. The current thinking, while recognizing the aspirations of people and the social pressures generated by them which have particularly led to the establishment of a large number of affiliated colleges, wishes to retain the elitist character of the university. The main argument advanced in support of it is of maintaining standards, particularly in view of the paucity of resources. The ideas implicit in the promotion of polytechnics and of universities with lesser standards are in reality a countercheck to the social pressures generated by social aspirations of people for higher education. Such institutions are probably envisaged to meet the market needs of manpower. Further, the existence of such institutions, if the experience of institutes of technology and

on the other hand, would have to develop the necessary conceptual framework for the historical, social and political implications of science and technology.

The development of science and the knowledge generated by it has raised many questions, not only with regard to social and political values, but also the moral and ethical value system. A continuing debate has been going on since Darwin published his theory of evolution. Recent developments in biology are likely to intensify the debate to a sharper level. There is, therefore, a need to study the relationship of scientific knowledge with values. This may be necessary in itself, as well as to harmonize scientific knowledge with human values and to evolve the latter in consonance with the former. In other words, universities would have to fully realize the new dimensions of science and technology. Instead of imparting information in different branches of science and different methods of doing it they would have to study science, its nature and character, its social and political dimensions and its integration with other disciplines and human activities.

If the teaching is to be made more flexible and diversified and the research conducted is of a multipurpose nature, requiring the cooperation of different fields of specialization and creation of multipurpose groups for specific projects and for defined periods, then is the existence of departments as basic units of organization desirable? Any study in this direction would of necessity raise the question of functions of a department as an administrative unit and as promoter of a specific field of specialization. Under the prevailing conditions in India the departments act as centres of vested interests, both from the point of view of administration and research. They are hierarchical in organization, with concentration of power in the head of the department, and act as a brake on developing newer areas of research. Further, due to increase in the number of highly specialized fields with one area of science, their number must either be increased with the creation of ever new branches, or the new areas be allowed to suffer in order to support established areas. In any case these developments have created a situation where the continued existence of the concept of a department needs to be questioned and requires serious study.

The points mentioned in the preceding paragraphs were meant to pose the basic problem of management of universities in the

effort in two directions—first, by developing a history of science and secondly, a cadre of generalists.

Promotion of historical studies in science is essential for two reasons. To understand the character of earlier Indian science and to investigate factors which might have led to the thwarting of science and its subsequent decline in Indian society, it is also necessary that the present alienation of science should be ended. In the absence of a thorough study of the earlier scientific tradition of the country, contemporary science is taken as a Western phenomenon. Students know about the beginnings of science from the Greeks to the modern times, with a few Indian scientists in antiquity discussed cursorily, and hence are more familiar with the growth and problems of science of a different culture-area than their own. One of the many results of such an attitude is reflected in the continued looking to advanced countries or what Ashby had called, "nostalgically treasuring his threads of communication with England."

In order to carry out such studies and impart knowledge and prepare necessary study material, the courses on history of science need to be initiated to train a cadre of qualified people for research as well as for imparting training to others. At the moment there are hardly any in the country. Like the need for historians of science, there is also a need for generalists. Generalists are needed for broadly three functions in the context of contemporary science and technology; to act as popularizers of science, as critics of scientific development and its utilization and to help in decision making. Each of these functions require a different type of study than given to those who study science at present. It would mean studying science rather than doing science. Each category requires that students be trained in areas, as suggested by Pippard and others.¹⁹ But in addition to having obtained the necessary background in terms of the world picture, knowledge of methods and technology and society, there would be a need for further training to enable the students to discharge their functions effectively in the areas of their professional choice. The popularizers would need training in journalism and handling of mass media, while decision makers would need to be initiated in contemporary methods of analysis and use of computers. The science critics,

¹⁹ *Loc. cit.*

TABLE I
ANNUAL OUT-TURN IN INDIA AND USA*
(Figures in thousands)

Level	1960		1965	
	India	USA	India	USA
Matriculation or equivalent	571.3	1864.0	913.7	2665.0
First university degree	97.1	392.4	158.2	535.0
Master's degree	26.4	74.4	42.7	112.1
Doctorate degree	0.7	9.8	1.0	16.5

TABLE II
MASTER'S DEGREE AWARDS (1965 IN INDIA AND USA)*

Subject of Master's degree	India	USA
Chemistry	1,943	1,684
Physics	1,388	1,906
Mathematics	1,883	3,853
Statistics	365	295
Botany	702	343
Zoology	760	575
Agriculture	1,197	1,157
Engineering (all fields)	901	12,056
Economics	4,337	1,268
History	404	3,161
Education	803	43,741
Political Science	3,453	1,210

TABLE III
PATTERNS OF UNDERGRADUATE STUDIES IN UNIVERSITIES
AROUND 1965-66*
(Percentages)

Field of Study	UK	USA	USSR	India
Science	27.6	12.9	17.4	28.4
Engineering & Technology	18.5	6.5	38.9	6.6
Medical	9.2	5.1	7.7	3.2
Arts and Humanities	44.7	75.5	36.0	61.8

NOTE : UK Data by faculty-wise enrolment in universities. USA and USSR Data by out-turn in 1966. Indian Data by out-turn in 1965.
*SOURCE : Kamlesh Ray, "Education and Employment", *Mainstream*, Vol. IX, Nos. 1, 2 and 3, Annual 1970, pp. 27-31.

context of their new role. Besides these there are other serious problems, of decision-making machinery, of the participation of teachers and students and other important issues which require detailed examination with a view to finding practical solutions.

The preceding brief discussion would amply reveal the contemporary relationship of science with the universities. The main feature which emerges is that science can render a very useful service to the universities by studying the various dimensions of a university and its relationship with other institutions and society, systematically and through the use of methods and techniques now available to science with a view to integrating science with the universities and universities with societies and broader human goals.

TABLE V

INSTITUTIONS FROM WHICH MORE THAN 100 PAPERS WERE
PUBLISHED DURING THE YEAR UNDER ANALYSIS†

<i>Institution</i>	<i>Total No.</i>	<i>No. in foreign journals</i>	<i>No. of disciplines in which contribution is</i>		
			10	10-5	5
University of Calcutta*	279	50	8	3	1
Agra University	260	10	5	1	4
Indian Agricultural Research Institute	227	12	3	1	3
Banaras Hindu University	226	22	6	3	2
Delhi University	206	58	6	1	4
Indian Institute of Science	194	26	5	1	8
Rajasthan University	177	32	6	1	4
University of Madras**	174	16	4	2	5
University of Bombay	162	7	5	1	6
Panjab University	160	18	6	1	6
Andhra University	154	20	5	3	2
Atomic Energy Establishment	133	26	4	1	5
Kerala University	128	4	4	—	4
University of Allahabad	110	49	3	2	3
University of Lucknow	110	15	3	2	3
Tata Institute of Funda- mental Research	107 /	63	2	—	4
Vikram University	107	2	3	1	5
All institutions	2914	430			

*Excluding Saha Institute of Nuclear Physics.

**Excluding Agricultural College & Research Institute, Coimbatore.

SOURCE: *Scientific Research in India, an Analysis of Publications*,
(Occasional Paper Series No. 3), RSPO, 1967, CSIR, New Delhi-1.

†Data for the same year as in Table VI.

TABLE IV
DISTRIBUTION OF RESEARCH PUBLICATIONS AND THEIR ORIGIN

Institution	Total No. of publi- cations	Research papers	Letters to editor and short communi- cations	Technical reports	Symposia & conference papers	Review & informative articles	Case reports	Others
Universities*	3816	2492	613	6	40	353	287	25
CSIR**	766	537	115	22	23	69	—	—
Medical laboratories and hospitals	1023	543	108	—	—	203	157	12
Agricultural labora- tories	1187	764	291	4	1	123	4	—
Industrial and other laboratories***	1545	957	277	43	88	177	3	—
Other institutions, in- dividuals	1122	485	99	5	7	460	60	6
From abroad	345	170	20	6	34	102	13	—
Total	9804	5948	1523	86	193	1487	524	43

*Including medical, engineering and agricultural colleges.

**Including research association laboratories supported by CSIR.

***Including research organizations of all ministries not covered by the above groups, private maintained laboratories etc.

SOURCE: *Scientific Research in India, an Analysis of Publications*, (Occasional Paper Series No. 3), 1967, RSPO, CSIR, New Delhi.

The Brain Drain

AMULYA KUMAR N. REDDY

Brain drain has been one of the most controversial aspects of the lengthy debate concerning Indian higher education. The scope of flight of talent from India is substantial, and the issue has become one of national importance. In the recent past changes have occurred in the overall picture due to economic problems in the United States and certain other factors. Thus, it is necessary to examine this important issue in depth and to explore its ramifications. It is the purpose of this chapter to show:

(1) that brain drain has serious financial and psychological implications;

(2) that it is intimately connected with the Indian Government's policies towards the strategy of industrialization, and finally,

(3) that the problem can be solved only if the government adopts an unambiguous policy of national self-reliance in industry.

The term "brain drain" will be taken to refer to the flow of trained technical personnel (scientists, engineers, doctors, teachers, etc.) from one country to another.

Magnitude of brain drain

The dimensions of the problem emerge by asking: *is there a*

TABLE VI

INSTITUTIONS FROM WHICH MORE THAN 50 PAPERS WERE CONTRIBUTED
IN APPLIED SCIENCES*

<i>Institution</i>	<i>Total No.</i>	<i>Medi- cine</i>	<i>Engi- neering</i>	<i>Agri- culture</i>	<i>Chem- ical Tech- nology</i>	<i>Build- ing Science & Mann- ufacture</i>
Indian Agricultural Research Institute	144	—	—	142	2	—
Agra University	142	102	4	35	—	1
University of Calcutta	141	96	18	20	—	—
University of Bombay	114	61	3	26	14	12
University of Madras	107	82	9	15	1	—
Banaras Hindu University	97	77	5	14	—	1
Kerala University	94	63	2	29	—	—
Calcutta School of Tropical Medicine	89	89	—	—	—	—
Indian Institute of Science	84	7	40	1	35	1
Vikram University	76	47	2	27	—	—
Rajasthan University	73	41	4	18	—	—
Punjabi University, Patiala	70	69	—	—	1	—
Forest Research Institute and College	68	1	4	29	—	34
Agricultural College & Research Institute	66	—	—	66	—	—
University of Delhi	59	55	—	3	1	—
Panjab University, Chandigarh	59	41	2	11	4	1
University of Lucknow	56	55	—	1	—	—
Central Food Technological Research Institute	55	31	—	2	22	—
Andhra University	52	30	9	6	7	—
All India Institute of Medical Sciences	51	51	—	—	—	—
University of Patna	51	44	1	6	—	—
Central Drug Research Institute	50	46	—	4	—	—

SOURCE: *Scientific Research in India, An Analysis of Publications*, (Occasional Paper Series No. 3), RSPO, 1967, CSIR, New Delhi-1.

*Data based on journals abstracted in *Indian Science Abstracts*, Vol. 1 (1965) (12 numbers) and Vol. 2 (1966) (one number).

were lost through immigration. Brain drain (to the USA at least) occurs essentially by way of students going there for higher studies.

The U.N. report also states that, of those graduating every year in India, 6.1 per cent of the engineers and 1.1 per cent of the doctors emigrate. If one also takes into account the scientists and teachers, it looks as if *at least ten per cent* of the yearly output of the educational system is exported. This figure is only a national average. In the case of some "premier" institutions, such as the Institutes of Technology, the export figure may be as much as 25 per cent. Thus, of the 400 graduates produced annually by a foreign-aided Institute of Technology, as many as 100 depart from the shores of India to the aid-giving country.

Costs of brain drain

On the basis of the above statistics, there is no doubt whatsoever that there is considerable and increasing brain drain from India. The obvious question arises: *is this brain drain worth bothering about?* Several Indian leaders have expressed themselves forthrightly, though naively, on this issue. For example, Morarji Desai, when he was Finance Minister, said in Calcutta on 15 December 1968, that "brain drain is not a loss to India". Let us look at the financial implications of this brain drain.

According to the U.N. report, a sum of Rs 4.1 crores was spent on educating about 2,500 Indian professional-workers who emigrated to the USA in 1967. Thus the national exchequer incurred a *per capita* expenditure of about Rs 16,600—on these 2,500 emigrating Indians. These figures have apparently been furnished to the UN by Indian sources, and the UN report has commented that they are "exceptionally low" estimates compared with those from Africa and Latin America. The report quotes the Latin American estimate of Rs 1.5 lakhs per professional emigrating to the USA—this is about ten times the Indian figure (note that the European cost is Rs 3 lakhs per professional). However, even by assuming the per capita cost of Rs. 16,000—it appears that the country has spent Rs 33.2 crores on educating the 20,000 Indians who emigrated between 1962 and 1967. Since Indian science, Indian technology and Indian medicine cannot benefit from the education imparted to Indians who settle abroad, it follows that a minimum of Rs 33.2 crores was poured down the

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Costs of brain drain

On the basis of the above statistics, there is no doubt whatsoever that there is considerable and increasing brain drain from India. The obvious question arises: *is this brain drain worth bothering about?* Several Indian leaders have expressed themselves forthrightly, though naively, on this issue. For example, Morarji Desai, when he was Finance Minister, said in Calcutta on 15 December 1968, that "brain drain is not a loss to India". Let us look at the financial implications of this brain drain.

According to the U.N. report, a sum of Rs 4.1 crores was spent on educating about 2,500 Indian professional-workers who emigrated to the USA in 1967. Thus the national exchequer incurred a *per capita* expenditure of about Rs 16,600—on these 2,500 emigrating Indians. These figures have apparently been furnished to the UN by Indian sources, and the UN report has commented that they are "exceptionally low" estimates compared with those from Africa and Latin America. The report quotes the Latin American estimate of Rs 1.5 lakhs per professional emigrating to the USA—this is about ten times the Indian figure (note that the European cost is Rs 3 lakhs per professional). However, even by assuming the per capita cost of Rs. 16,000—it appears that the country has spent Rs 33.2 crores on educating the 20,000 Indians who emigrated between 1962 and 1967. Since Indian science, Indian technology and Indian medicine cannot benefit from the education imparted to Indians who settle abroad, it follows that a minimum of Rs 33.2 crores was poured down the

brain drain from India, and if so, what is the extent of this brain drain? The statistics on the subject are rather alarming. In the five-year period ending 30 June, 1967, former Secretary General of the United Nations U Thant reported that 9,300 professional people emigrated from India to the USA and Canada. This figure, it must be stressed, does not include Indians who stay abroad for long periods of five to fifteen years (about 20 to 60 per cent of their creative life), and therefore return to India with stature and reputation but with their creative potentials often not at their highest level. According to a study¹ of the Council of Scientific and Industrial Research, about 2,000 scientific and technical personnel are migrating from India to Britain every year. Assuming that about 700 Indians emigrated to other countries such as Germany, France, Scandinavia, Italy and so on, it has turned out that in the five-year period from 1962 to 1967 *twenty thousand trained Indians left India virtually on a permanent basis.*

Further, according to the U.N. report, the extent of brain drain is increasing every year, thanks to liberalized immigration laws in the USA and Canada. For instance, the immigration of Indian engineers and scientists into the USA increased from 1429 in the five years ending 30 June 1966, to 1334 in the single year ending 30 June 1967. This growing flight of highly trained manpower to the USA is not unique to India; it is a phenomenon experienced by other developing countries too. Thus, according to the 23rd Report of the Committee on Government Operations to the 90th Congress of the U.S. House of Representatives (the COGO Report), immigration into the USA from developing countries quadrupled in ten years, rising from 1769 in 1956 to 7913 in 1967.

The *modus operandi* of the emigration of Indians to the USA has been explained in the COGO report. In 1967 seventy-eight per cent of the Indian immigrants were students who originally entered the USA with the declared intention of obtaining education and returning to India. Thus, the immigration of Indian scientists and engineers into the USA is very largely the immigration of Indian students. Further, ex-student immigrants form a sizable proportion of the Indian student body in the USA. Of the 5,146 Indians enrolled in U.S. universities in 1967, 1,074 (21 per cent)

¹ *The Times of India*, New Delhi, 4 November 1968.

department with 15 to 20 staff members and 55 to 75 Ph.D. students runs from Rs 45 lakhs to Rs 75 lakhs per year; and the expenses (including staff salaries) incurred during the Ph.D. programme are Rs 5 lakhs per Ph.D.³ In comparison, the working expense for a similar-sized department in India is invariably less than Rs 5 lakhs per year, and the cost of producing a Ph.D. in India is only about Rs 50,000.

It is almost certain that it was the realization of the economic advantages resulting from attracting skilled immigrants that induced the Canadian Minister of Immigration to say in October 1966: "The high cost of training professional and skilled people is a measure of the benefit derived upon their arrival in Canada". The US Secretary of State made an even more revealing statement in 1965. He said: "Under present circumstances, the United States has a rare opportunity to draw immigrants of high intelligence and ability from abroad; and immigration, if well administered, can be one of our greatest national resources. We are in the international market of brains." The context in which this statement was made is extremely important. The U.S. Secretary of State was arguing for liberalizing US immigration laws to facilitate brain drain from the developing countries.⁴

Long-term consequences of brain drain -

The emigration of a significant number of high-quality personnel and the financial losses associated with this emigration only represent the short-term consequences to India. They are only the visible tip of the iceberg. It is the long term repercussions that constitute the real danger.

The educational system suffers the brunt of the damage. Consider a teacher in an institute of technology who knows that, out of his class of twenty, over five of the top students are waiting to go to the USA, most probably never to return. If the teacher is

³ These figures are from a 1965 "COSC-NAS" report published by the Committee for the Survey of Chemistry of the US National Academy of Sciences.

⁴ The casual link between the technical manpower needs of the USA and its immigration policies is abundantly clear from the recent discussions on the need to alter immigration laws in view of the current unemployment of scientists and engineers in the USA (*Deccan Herald*, 3 February 1971). Thus, immigration laws serve as a tap to turn on and off the brain drain to suit the needs of developing countries.

drain over a five-year period. *Brain drain, therefore, represents a serious financial loss to our country.*

Benefit to the West

That high-quality manpower lost through brain drain becomes obvious if one looks at the reasons why the advanced countries permit, encourage and facilitate this immigration. The UK for instance, receives 1,500 doctors per year from developing countries and it costs about Rs 2.7 lakhs to train one doctor in the UK.² Hence, the influx of doctors represents an annual saving of over Rs 40 crores to the British exchequer. These figures throw light on the following facts:

- (1) 50 per cent of the British National Health Service is now staffed by non-Britons;
- (2) there were 2,300 Indian doctors working in the UK in 1968; and
- (3) 60 per cent of the hospital interns in the north-west of England are Indian-educated.

The case of the USA is similar. According to the COGO Report: "The very high contribution of the developing countries to U.S. medical manpower is equivalent in numbers to the entire output of fifteen US medical schools graduating the largest numbers of M.D's in 1967." The financial gain resulting from this immigration is therefore equal to the combined budget of 15 US medical colleges *plus* the capital investment on setting up their facilities. This situation is not characteristic of the US medical services alone. It is also characteristic of US scientific and technological institutions as will be shown further in this article.

An important point must be stressed here. Since educational costs are far higher in the developed countries than in the developing countries, it is cheaper for an industrialized country to import technically trained people than to train them locally. An idea of the economics of the brain drain may be obtained by considering the cost of running a chemistry department and that of producing a chemistry Ph.D. from an M. Sc. In the USA, the total recurring costs (exclusive of university overheads) of operating a chemistry

² *The Times of India*, 5 November 1968.

profession by gravitating to an excellently equipped laboratory, to a youngster's desire to escape the oppressiveness of an orthodox home by exulting in the greater permissiveness of the societies of the West. Other reasons to emigrate may include the ease with which mediocre men can earn enough to maintain an affluent life in the developed countries, the desire to obtain for a physically handicapped child the special treatment and schooling available abroad, the drive to uplift economically a large and impoverished family, the desperate attempt to flee from the vicious backbiting and politicking in a particular Indian institution, and even a romantic entanglement with a foreign partner.

There is a second reason why the case-study or individual approach does not generate sufficient insight into the causes of brain drain. It leads us to discussions on bureaucracy, the role of administrators, the heritage of hierarchy and red tape, the refusal of tired old men to quit the seats of power, the neglect of the merited, the frustration of the excellent and the triumph of mediocrity. Such discussions not only beg the question as to the origin of these defects; they make one conclude that brain drain is a purely Indian problem arising from characteristically Indian defects in Indian institutions. But this is certainly not the case.

The brain drain continues to be a serious headache to European countries, particularly Britain, which lost 2,700 scientists and engineers in one year alone (1966). Between 1948 and 1968, according to a study prepared by the London School of Economics, about 100,000 scientific and technical personnel left Europe for North America. It cost European taxpayers \$4-5 billion (between Rs 3,000 crores and Rs 3,750 crores) to educate these young specialists. One of the most revealing comments on the loss incurred by Britain is that by Lord Bowden, Principal of Manchester College of Science and Technology. He said: "Few people realize the value of these migrants to the community. If we capitalize the value of those who have left the British Isles for America since the war, we have very much more than paid back the whole of the Marshall Plan aid (about \$12,000,000,000). The men who went last year will be worth something more than \$500,000,000 to American industry in their lifetime. The rich countries are becoming richer at the expense of the poor countries." No wonder the UK Government

conscious of his professional tasks and the tasks of science and technology in India, he is bound to see the pointlessness of his efforts and thus become frustrated. What is more likely, however, is that the teacher will attempt to tailor-make his products for the foreign export market. Or as the US COGO Report states: "...as the United States and other advanced countries take in large numbers of those with skills...the reform of ill-adapted educational systems (in the developing countries) can be delayed... Emigration outlets for such individuals may actually encourage the growth of institutions *better suited for training manpower for the United States than for the developing countries.*"

The report continues with an important comment on the very serious question of the longrun damage to the national morale of a developing country. "The movement of large numbers of highly trained people can add to a sense of national frustration and to a sort of contagious outward movement. It can damage the morale on the part of those who remain. It can encourage bright young people to look towards emigration instead of national development as a personal goal." Thus, the harmful effects of brain drain on nation-building efforts must be viewed with alarm; brain drain cannot be dismissed with flippant statements.

Case-study approach to causes of brain drain

Recognizing the crucial importance of stopping further talent migration and recovering some return on our investment by inducing this talent to return, a central question arises: What are the causes of brain drain? The customary and hackneyed approach to this problem is, in effect, to make case-studies of individual brain drainees and to generalize from them reasons for their decisions to emigrate. This approach on the basis of the decisions of individuals is not a fruitful one for several reasons.

First, it is extremely difficult to determine the *true* reasons for emigration, though one hears several *good* reasons. A man who has succumbed to the "lure of the buck" will lecture on how the research facilities are pathetically poor in India. Or, a youngster doing a glorified technician's job in the West will elaborate on the theme that merit is not recognized in India or that science knows no national frontiers. And when one is sufficiently close to the emigre to learn the truth, one comes across widely varying reasons. These range from a dedicated scientist's drive to excel in his

median annual salaries in the USA are \$9280 (Rs 69,600) and \$10,200 (Rs 76,500) for bachelor-level chemists and engineers respectively. Valid comparisons must be made on the basis of real incomes—the goods and services these salaries can buy. However, these sophistications only refine the analysis, they cannot controvert the basic fact that *salary differentials constitute the most powerful driving force producing a flow of brains from less developed to more developed countries.*

The second driving force is based on the so-called logistic support (the back-up of equipment and facilities) which a technical man receives in various countries; *brains tend to flow from poorly equipped institutions to well-equipped institutions.* In the case of a scientist, for example, this back-up involves materials, instruments, libraries, technical and secretarial assistance and opportunities to meet other workers in the field. In the case of a doctor, on the other hand, the type of support sought for will be in the form of well-equipped hospitals, libraries and other facilities.

The extent to which technical personnel in various countries are provided with back-up may be gauged by the per capita annual expenditure on research and technology which is Rs 900 in the USA, Rs 190 in Europe and only Rs 2 in India. Another way of indicating the wide disparity in facilities and equipment in the West and India is to see what percentage of the gross national product is spent on research and technology. The relevant figures are 3 per cent (about Rs 17,400 crores) in the USA, 2 per cent in Europe and 0.7 per cent (about Rs 214 crores) in India.

A very direct method of comparing the vast difference in the logistic support is to consider the average investment on equipment in India and abroad. In the case of chemistry, for instance, the 1965 COSC-NAS report has stated that 121 American Ph.D.-granting chemistry departments have invested approximately \$55 million only on major instruments. This works out to about Rs 34 lakhs per department. In contrast, it is unlikely that more than five out of the ninety Indian universities have invested more than Rs 5 lakhs for major instruments in the chemistry departments.

Thus, brain drain from India to the West, though essentially the result of the driving force of income differentials, is further stimulated by the driving force set up by differences in the back-up

moved the Jones Committee to write a report on the brain drain issue.

Flow process approach to brain drain

The lesson that we have to draw is that brain drain is not a specifically Indian problem; it is a feature of the modern international scene in which the economics of different countries are developed to different extents. Thus, the most fruitful approach to the problem of brain drain is to seek the socio-economic factors which produce a flow of skilled personnel from some countries to others.

The crucial feature of brain drain is that it is a *flow process*. Hence, it should bear some analogy to the various flow processes of physical science, such as the flow of electricity, the flow of heat and the flow of fluids. These various physical flow processes have two features in common. First, the flow always results from a *driving force* operating on the entities which flow; secondly, the driving force arises because, in the two regions between which there is a flow, a *characteristic quantity* has different magnitudes. For example, a difference of temperature (the characteristic quantity in the case of heat flow) across a metal rod results in a temperature gradient (the driving force) which induces the flow of heat from the high temperature region to the low temperature region. We must ask, therefore, what are the driving forces which induce a flow of skilled personnel from India to the advanced countries of the West?

The most important driving force arises from differences in the standard of living in two countries; *manpower tends to flow from the poorer country to the richer country*. A quantitative expression of this economic driving force is the per capita monthly income which is Rs 1,800 in USA, Rs 900 in UK and Rs 50 in India. These glaring differences reflect the vast change in standard of life when an individual migrates from India to the UK or Canada or the USA. They also represent to a person considering emigration the possibility of acquiring a luxurious home, colour television and hi-fi sets, fancy cars and an abundance of easily afforded consumer goods. Strictly speaking, one must compare the difference in income for a particular profession. For instance, chemistry and engineering graduates are started on about Rs 5,500 to Rs 6,500 per year in India, whereas the corresponding

tend to flow to countries which display a pressing and urgent demand for manpower, and away from countries producing surplus, and therefore unemployable, manpower. Whether there is an excess or deficit of manpower in a particular country depends upon whether the educational system of that country is training more or less people than can be absorbed in jobs.

The USA and Canada are outstanding examples of countries which exert a strong attractive force on highly trained personnel. This is because their own educational systems have been notorious failures in meeting their manpower requirements of scientists, engineers, doctors and other specialists. The statistical data unambiguously support this judgment. For instance, Professor Scott estimated⁵ that the increase in demand in the USA for chemists and engineers would be 81,500 and 7,17,200 respectively over the decade from 1960 to 1970; whereas the increase in supply from the US educational system would be 48,000 to 59,000 chemists and 4,50,700 engineers for the same period. Thus, in 1969-70, a shortage of 22,500 to 33,500 chemists and 2,66,500 engineers was expected to develop. It is this strong demand that has been met by the import of chemists and engineers or by brain drain. Under these circumstances, one must not be surprised to learn that 63 per cent chemists in the USA and 64 per cent of the engineers are foreign-born,⁶ or that 60 per cent of the post-doctorals in 1965 were foreign graduates.⁷

Though a shortage of manpower must exist in the country which attracts brains, it does not necessarily mean that the country from which there is an outflow must simultaneously be producing manpower in excess of its needs. Despite a perfect adjustment in the supply and demand for manpower within a country, the driving forces arising from standard of living, facilities, etc., can produce an outflow of brains from the country. If for example, in addition to the other driving forces causing brain drain from India, there is also a surplus of engineers, then the resulting unemployment will set up a driving force repelling or pushing engineers away from India. In other words, the production of surplus manpower in specialist categories will enhance brain drain from a country. The basic question, therefore, is whether the Indian educational

⁵ *Chemical Engineering News*, 26 April 1965.

⁶ *Nature*, 22 November 1969

⁷ COSC-NAS Report.

available for the discharge of a profession.

The third driving force responsible for the flow of brains arises from the differences in the way technical people are managed in different countries. The driving force here stems from the fact that technical people seek to work in an atmosphere which brings out the best in them and accords them unstinted recognition for their achievements. In other words, *there is a tendency for brains to flow towards institutions and countries where there is better management.*

All complaints about bureaucracy in Indian institutions, about the emphasis on status rather than on stature, about various types of personal humiliations, about various red tape procedures, about youth being granted restricted entry to the halls of decision-making, are indicative of incorrect handling and treatment or of poor management of technical personnel. Even when the men in power seek to exercise good management, they often find themselves hamstrung by rules, outside interference and possibilities of adverse court decisions. Inheritors of administrative practices designed in the British days to preserve *status quo* rather than generate technological change, they have virtually no power either to throw out "rotten apples" or to initiate an influx of high quality personnel. As a consequence, it becomes almost impossible to reward excellence, encourage those with potentiality and reject those who are a curse upon the institution.

All this is in contrast to the developed countries, particularly the USA, where the management of technical people has been evolved into a fine art, and it is claimed, into a science. It is this concern for the theory and practice of management of technical personnel (there are even specialist journals devoted to the subject) that has led to the management gap between India and the developed countries. No wonder that most Indians who have worked abroad assert that foreign institutions are able to extract far more creative work out of them than what they themselves thought they could produce.

The fourth driving force arises from maladjustments between manpower supply and manpower demand in one or both of the countries between which there is a flow of brains. Only countries with a shortage of technical personnel permit and encourage an inflow of brains; and only countries with an excess of technical personnel are indifferent to an outflow of brains. Thus, *brains*

reduce drastically further brain drain, and even reverse it. To achieve this control over the atmosphere in which our scientists and engineers work, it is vital to understand the climate which persists in the institutions of Indian science, technology and education. Rather than give casual judgments in this matter, it is far better to view Indian science, technology and education in their historical context and understand what circumstances are favourable to the generation of a climate of challenge and excitement in India.⁸

Historical context

The pre-Independence picture is fairly simple. The colonial rulers looked upon this country mainly as a supplier of raw materials and as a dumping ground for foreign manufactures. Consequently, the development of Indian industry was discouraged. Such circumstances implied a redundancy and an irrelevance of Indian science and technology, for the development of science and technology is part and parcel of a programme of industrialization. Further, only those aspects of the educational system were developed which supplied the manpower needs of colonial administration and its civil engineering, transport and health services.

With the advent of independence, two policies for industrialization were set in motion. One policy was aimed at coming to terms with foreign industry and building up Indian industry through so-called "foreign collaboration" agreements. On the technical side, these agreements implied the transfer of operational and maintenance knowhow from the foreign to the Indian scene with minimal or zero design contributions from Indian scientists and engineers. The other policy consisted essentially of a re-statement of the Gandhian swadeshi policy in a form appropriate to the modern scene, a policy of national self-reliance, it was aimed at Indians developing the capacity to solve technical problems, to design and erect industrial plants, instruments and machines, and to develop new industries. Like its forerunner of

⁸ The subsequent discussion has been devoted exclusively to a study of how a climate of challenge can be created for *scientists and engineers*. The specific solutions to the brain drain of doctors have not been considered, not because the problem is unimportant, but because of the author's inadequate understanding of the medical profession.

system is planning its output in relation to the developmental needs of India. This question will be considered after describing yet another driving force.

Problems in stopping brain drain

It may be concluded, therefore, that the flow of trained manpower from one country to another results from the operation of driving forces set up by differences (1) in standard of living, (2) in facilities, (3) in management, (4) in manpower demand and supply, and (5) in the challenge associated with technical work. Of these, the ones involving standard of living, facilities, management and manpower demand are acting in such a way that there is a flight of brains from India to the developed countries of the West. To stop brain drain, these driving forces have to be reversed. Can this be done? The probability of achieving such a reversal depends upon these driving forces.

For instance, it is just not possible to give *all* our technical men the living standards they would enjoy in the West. If we pay our one million qualified scientists, engineers and technicians, Rs 1,000 per month which is only about one-tenth the salary of Western technicians in India, the annual wage bill comes to the preposterous sum of Rs 1,200 crores. Even if this payment were possible, ethical and political considerations must rule out such a plan.

The acute shortage of technical manpower in the USA and Canada is due to causes in those countries; their manpower production is not in our control. The best we can do is to ensure that it is *not* unemployment that drives brains away from India. We can also equip a *few* institutions very well, but it is impossible to equip *all* Indian institutions in American style, for we do not have the Rs 17,400 crores that the USA spends annually on science and technology. We can, however, achieve better management and better adjustment between manpower production and needs. But these achievements do not come with pious resolutions and learned writings. As will be shown later, it is the politico-economic context which decides whether there is a premium on good management and a balance between manpower demand and supply.

There remains for consideration the driving force of challenge. It is a crucial force, because it will be argued below that the control of this driving force lies in our hands and that it can be made to

Quite justifiably, therefore, Prime Minister Indira Gandhi declared⁹ that she is "not for foreign collaboration at the cost of freedom" and K. Hanumanthaiya, Chairman, Administrative Reforms Commission, referred¹⁰ to this lasting dependence upon foreign industry as a "sophisticated form of slavery."

The continued and increasing dependence on foreign collaboration is illustrated clearly by considering their financial costs. These have been surveyed by the Reserve Bank of India in its report of 12th December 1968. It appears that, even though the inflow of foreign capital is *decreasing*, the outflow of remittances by foreign firms on dividends, profits, royalties and technical fees, etc., is *increasing*. For example, in 1964-65 the outflow was Rs 44 crores or double the capital inflow of Rs 20 crores. Of the total outflow of capital, the remittances on technical fees alone accounted for Rs 27 crores for the period 1960-67, and has increased from Rs 1.5 crores in 1960-61 to Rs 8 crores in 1966-67.

It is in the context sketched above that one must examine whether Indian industry is providing the driving force of challenge and excitement necessary to prevent, or at least mitigate, brain drain from India. This examination must commence from the crucial fact that the dominant sector of Indian industry, viz., largescale industry which accounts for the major fraction (65 per cent) of our industrial output, has contracted to depend upon foreign collaboration. What are the consequences, effects and implications of this decision?

The consequences of foreign collaboration

The first, and most serious, implication, is that this dominant sector of Indian industry has no need for and no stake in the development of indigenous design knowhow and problem-solving capacity. Largescale industry rarely commissions Indian designers and fabricators to put a plant in India; their roving eyes are directed to foreign industry. In the inevitable confrontation with technical problems, the approach is to get them solved abroad and then to buy the solutions and sometimes even import foreigners to implement the solutions.

The second repercussion of the policy of industrialization

⁹ *The Times of India*, 28 April 1969.

¹⁰ *The Hindu*, Madras, 17 February 1969.

the thirties, the new swadeshi policy was directed towards the liberation of the country from foreign domination and towards the consolidation of Indian independence.

Present profile of Indian industry

The smallscale industries sector, the organized portion of which accounts for some 35 per cent of the total industrial output in India, has in practice adopted the policy of national self-reliance. Perhaps there was no element of choice in this adoption of a *swadeshi* policy, because a small-scale unit with a capital investment on machinery, etc. of less than Rs 7.5 lakhs is too small either to interest a foreign collaborator or to afford the costs of foreign collaboration. Notwithstanding the motives, the fact remains that even without buying foreign knowhow, patents and licences, small industries have imitated advanced technology, adapted it to Indian conditions and have even innovated.

In contrast, largescale industry, whether of the public or private sectors, has proceeded through the 2,500 foreign collaborations sanctioned between 1948 and 1968. The basic story of these foreign collaborating industries follows a standard pattern. The plant and machinery are manufactured abroad, shipped to India, and erected here under the supervision of foreign technicians. Indian engineers are then trained in the operation and maintenance of the plant. Sooner or later (generally later) the foreign technicians leave and the industry claims that knowhow has been transferred. But is this so?

Far too often, the detailed drawings have not been secured, and vital and frequently required spare parts are available only from the foreign collaborator. Above all, the thinking and calculations underlying the design and engineering of the plant have not been revealed. Without this crucial capability to design and fabricate a plant, it is improbable that we can put up a similar plant and it is impossible to engineer an improved plant. For the next plant, the industry has again to go back to a foreign collaborator.

Thus, the policy of foreign collaboration retards, if not altogether prevents, the development of design and problem-solving capability within the country. Unless design knowhow (not operational knowhow only) is acquired by Indians, our industrial independence and, to that extent, our political independence, is insecure.

the philosophical-social attitudes derived therefrom are irrelevant to the Indian scene, it is inevitable that the miseducated youth emerging from such a system feel useless when employed and angry when unemployed. It is this irrelevant education that is the root cause of student indiscipline. That everything is wrong with the education imparted and nothing is intrinsically wrong with the students turned out is proved by the fact that our boys proceed in droves to the developed countries of the West, and barring a few unfortunate exceptions, perform excellently in the educational, scientific, medical and technological institutions abroad.

Halting the brain drain: some proposals

The obvious conclusion from the above discussion is that as long as a major fraction of Indian industry decides to depend upon foreign collaboration, Indian science, technology and education cannot but exist in a context of irrelevance in which they are not charged with a clear-cut responsibility. And it is only such a responsibility which will generate a sharp challenge and a climate of excitement and thrill. But for such a responsibility to develop upon Indian science, technology and education, there must be an unswerving and unequivocal commitment to a policy of national self-reliance in industry. This then is the key to the generation of a climate of challenge.

Once it becomes more exciting to work in India than abroad, a crucial force driving talent away from our shores will have been reversed. Further, once clear-cut design, engineering and problem-solving responsibilities fall upon Indian technology and science, there will follow the joy that accompanies the successful completion of tasks and the ostracisms that are associated with failure. In such a climate, there will be a premium on the proper management of technical people, and those charged with responsibilities will find that their personal success depends upon cutting through red tape, eliminating bureaucracy, encouraging talent, however youthful if may be, rewarding excellence and weeding out incompetent people. As the quality of management improves in India, the associated driving force will turn in our favour. Since a decision to be self-reliant must be followed by a definition of priorities, it should become easy to provide adequate facilities to those institutions and individuals engaged in tasks of high priority and technical significance. At least those Indian institutions and

through foreign collaboration is felt by our designers and constructors or engineers and by our problem-solvers or scientists. They feel rejected and unwanted; they are not prized and valued. It is as if they are being sentenced to brain drain with the words: "Largescale industry has no need for scientists and engineers", just as the great chemist and oxygen-discoverer, Lavoisier, was sentenced to the guillotine during the French Revolution with the words: "The Republic has no need of chemists!"

The third effect of the policy of foreign collaboration is upon those Indian scientific and technological institutions which are supposed to be engaged in designing, engineering and problem-solving. Since this indigenous designing, engineering and problem-solving is treated as unnecessary and redundant by large-scale industry, it follows that there cannot be any firm and binding links between Indian industry on the one hand, and Indian scientific and technological institutions on the other. What links have been set up, for instance, between the Council of Scientific and Industrial Research and Indian industry, may have the proper form, but the essential content is lacking. The content has to be one of mutual interdependence between the production unit and the research, development design and engineering units. And when the production sectors of big industry are intimately bound to foreign research, design and engineering development units, how can there be a mutually stimulating relationship between Indian industry and Indian science and technology.

It is as if Indian largescale industry looks upon the foreign collaborator as the attractive mistress, and the Indian laboratory as the plain wife. Is it any surprise that in this situation the neglected wife languishes in despair and becomes really unattractive? It is natural that, under such circumstances, Indian science and technology turn to irrelevant problems. This milieu of irrelevance is the basic enemy of excitement and challenge.

Finally, the most serious element is the Indian educational system. Since dependence upon foreign collaboration is tantamount to devaluing and rejecting indigenous design and problem-solving capability, the educational system, which is supposed to generate and nurture that capability, is also undermined. Robbed of its rudder of social purpose, our educational system floats hither and thither driven by the needs of western manpower markets. When the contents of Indian educational courses and

the unit of Rs 100-crore industry may involve 1,000 people. What is clear, however, is that continued dependence upon foreign collaboration will drastically restrict the number of jobs available and will make it impossible for the country to absorb either those much-needed emigrés who want to return or those graduates who are produced annually by our educational system.

Finally, in a context of national self-reliance where Indian industry has nowhere else to turn for expertise and relevant background knowledge than towards the Indian educational system, the latter will discover its social purpose and relevance. Assuming a vital role in the process of national development, our institutions of education will experience for the first time a powerful pressure to transform. Only then will they impart philosophies and attitudes, and courses and training appropriate to the Indian scene. Only then will they plan outputs in relation to Indian needs.

During the last couple of years, there have been two major developments. First, the U.S. cutbacks on research expenditure, particularly in the field of astro space technology, have reduced drastically the employment opportunities for scientists and engineers in that country. This has led to much talk of "reverse brain drain" from the U.S.A. and to an impression in India that our brain drain problem has been solved. This is far too sanguine a view. In fact, the U.S. brain drain on foreign scientific and engineering talent reached a 20-year peak in the American fiscal year ending June 30, 1970, with Indians accounting for 22 per cent of this flow, according to a U.S. National Science Foundation report.¹¹ This report went on to say that 13,300 scientists and engineers emigrated to the U.S. in the fiscal year 1970, 30 per cent more than in the previous year; and of this figure, Indians accounted for 2,900. In that same year, an astonishing number of 10,810 Indians went to the U.S.A., all of them being permitted entry because of their "exceptional ability and professional skills."¹²

Thus, the brain drain issue is not dead; it is a live problem. This is to be expected. Even if the U.S. recession is not temporary and if U.S. research funds do not again flow massively into areas such as environmental science, inter-urban and intra-

¹¹ *Deccan Herald*, 12 May 1971.

¹² *The Times of India*, 29 December 1970.

individuals will act as a magnet for brains. Further, at that stage, one may even ponder over the ethics of creating a disproportionately high standard of living for our technical people.

A decision by big industry to grow by self-reliance will also have highly beneficial effects upon the employment potential of Indian industry. The foreign technicians who inevitably accompany a foreign collaborator are paid (in hard currency) roughly ten times the salaries of their Indian counterparts. For example, according to the October 1969 report of the Mysore Estimates Committee on Mysore Iron and Steel Limited, a sum of Rs 65,75,007 was spent in 1968-69 on 57 foreign technicians. This expense works out to about Rs 10,000 per head per month in a year when the Company made a loss of Rs 4.3 crores and when Indians were successfully running all departments of the Hindustan Steel complex. If the Company decides to continue to spend the approximately Rs 65 lakhs per year, they can employ at a monthly salary of Rs 1,000 over 500 Indians who at worst will yield the Company no bigger loss and at best will deliver the goods.

Apart from the increase in employment opportunities resulting from a decision to avoid foreign technicians who inevitably follow foreign collaboration agreement, there will be a tremendous demand for technical people once we choose to be self-reliant in the design and engineering of our plants and in the indigenous solving of problems. Every large industry which at present is depending for knowhow upon the foreign collaborator will have to set up a self-reliance unit for research, development, design, engineering and planning. Assuming, for instance, that each such unit is manned by a low figure of ten engineers and scientists with twenty supporting technical staff, then the replacement of 2,500 foreign collaborations ought to generate employment for 25,000 scientists and engineers and 50,000 supporting technical staff. This crude calculation is nothing more than a guess, perhaps uninspired; it has been presented only to indicate that the decision to be self-reliant will be associated with a marked increase in employment opportunities. This point needs to be studied seriously. For instance, it is obvious that the number of personnel required to man a self-reliance unit will rise disproportionately with the size and investment of the largescale industry. Thus, a Rs 10-crore industry may need a unit with only 30 people, whereas

the development of design knowhow and the creation of a climate of excitement and challenge, and is *one* of the main reasons why Japan has virtually no brain drain. An immediate result of following such an approach would be the funds which would become available for research and development. For example, taking India's 1966-67 payment of Rs 8 crores for technical collaboration fees, a Japanese approach would insist on a corresponding R & D expenditure of $4 \times 8 = \text{Rs } 32$ crores, which is about 1.5 times the 1969-70 expenditure of the Council of Scientific and Industrial Research on 43 national laboratories. A second result would be the creation of employment opportunities. Assuming simple proportionality, one can argue that if a sum of Rs. 135 crores was spent by India in 1969-70 on 62,000 qualified scientists and engineers, then Rs 32 crores would employ about 15,000 extra technical personnel. But, the crucial result of adopting a Japanese-type approach would be the clear-cut definition of R & D objectives, viz., the attainment of design knowhow and technological self-reliance in the large scale industry entering into the foreign collaboration agreement. This would constitute the challenge to our technical men and keep them on our soil.

That the solution of the brain drain problem depends upon the strategy of industrialization has been demonstrated in the text of the article. It has been shown that the smallscale sector of industry is perforce wedded to a policy of self-reliance and is therefore providing the challenge so necessary to attract and retain technical men. In contrast, the largescale sector, with its dependence on foreign collaboration as a substitute for indigenous research and development, has been responsible for treating our design and problem-solving capability as redundant, for making our scientists and engineers feel unwanted and thus for causing brain drain. Hence, the reversal of brain drain of scientists and engineers depends upon the largescale sector adopting a Japanese-type policy of taking off from foreign collaboration agreements to technological self-reliance in those industries in which indigenous knowhow is unavailable.

The implementation of such a policy requires industrialists sufficiently committed to the country to value its long term interests over quick profits and/or a government determined to compel such a commitment.

If big industrialists, whether in the public or private sector, are

urban mass transportation, etc., it should not be forgotten that other developed countries (Canada, U.K. etc.,) are there to host the brain drain process. It is also reasonably sure that the big boom in Australia will touch off a flow of desperately needed brains to that country. Hence, a solution to the problem of brain drain will not "happen" by all the developed countries growing a surplus of technical manpower and turning back the Indians knocking at their doors. The solution has to be engineered.

The second major development, which affects our suggestion of creating a climate of challenge by closing doors on the foreign collaboration, is the considerable amount of understanding which has emerged on the growth of science and technology in Japan. Whereas we took the view that the policies of foreign collaboration and self-reliance were mutually exclusive, it appears that the Japanese have relied on foreign collaboration to attain self-reliance. Though Japanese industries entered into 11,500 agreements between 1959 and 1968, they have always operated with the view that unless Japanese industry receives quantitatively increasing and qualitatively improving inputs from its own science and technology, the import of technology through foreign collaboration agreements will lead Japan to greater and greater technological servitude.

Hence, to prevent the import of technology from leading to technological dependence, and thence to economic and political dependence, foreign collaboration agreements have been used as a means to technological self-reliance. To ensure this aim, Japanese industrialists, in total contrast to their Indian counterparts, have backed up the import of technology with massive investments in research and development. These investments, *65 per cent of which come from private industry*, have assumed a simple pattern: *for every dollar spent on patent fees, licence fees, etc., for the import of technology, at least four dollars are spent on indigenous research and development in the very areas in which technology is being imported.* In this manner, the foreign collaboration agreements are being used in Japan as a take-off for research and development; whereas in India both the private and public sectors are guilty of using foreign collaboration agreements as a substitute for indigenous research and development.

In the context of the brain drain problem, it should be noted that the Japanese approach to foreign collaboration stimulates

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to be judged by their past performance, it is abundantly clear that they are by and large indifferent to national interests in the matter of design knowhow and technology. Therefore, it becomes incumbent on the government to ensure by coercion, if not by persuasion, that a collaborating industry will spend sufficiently on research, design and development to lead the industry to technological independence from the foreign collaborator. The public sector industries must be made to set an example in this direction. Thus, it is in the hands of government to set the guidelines for technological self-reliance by integrated policies for industry and science and technology, to initiate the climate for technological challenges and thereby to move towards a solution of the problem of brain drain.

The Agricultural Universities: Pilots of Rural Change

ASHOK THAPAR

The progress made by some of India's new agricultural universities is one of the few bright spots of an otherwise bleak academic horizon. Almost every State now has at least one such institution. Not all of them, admittedly, are unqualified successes. But even so, the emergence of the agricultural universities is a significant improvement in the traditional and moribund textbook-cum-dictated lecture approach to teaching and research.

A completely new and altogether more dynamic philosophy is taking shape on their campuses. The leading agricultural universities now see themselves as pilots of rural change backed up with problem-oriented research programmes aimed at solving the economic, social and personal problems of the people around them.¹ This, by any standards, is a remarkable development, more so in view of the fact that it has been accomplished in just a decade. The research work being done on some of their campuses compares favourably with any in the world.² There is also a lively dialogue between scientists and farmers. A big change has also taken place in the quality of students applying for admission

¹ Special report from the Rockefeller Foundation, *A Partnership to Improve Food Production in India*, December 1969.

² HB-I, developed by Dr D. S. Athwal, at Punjab Agricultural University in 1965 was the first hybrid millet to be grown commercially anywhere in the world.

During the 1950s the idea was pursued and two joint Indo-American commissions submitted detailed reports on the problems and prospects of extending the U.S. land grant model to India. An initial agreement was signed between the Government of India and the U.S. in 1953. Two years later this brought to India the first advisory team consisting of experts and administrators drawn from five U.S. land grant universities. This was the beginning of yet another marathon series of discussions. The Union government had already accepted the land grant idea, with its emphasis on integrated teaching, research and extension. But the proposed universities were to be set up in the states. And here lay the rub. It took a long time to explain the various advantages of this integrated approach to state government officials.⁵ The first university based on this principle did not come into being till 1960 when the Government of Uttar Pradesh allotted a vast 2,000-acre campus to the Govind Ballabh Pant University of Agricultural Sciences in the swamp land of the Terai.

Since then things have been moving relatively faster. The Punjab Government, under the farsighted leadership of the late Pratap Singh Kairon, the then Chief Minister of India's most prosperous farming state, pushed through legislation to set up its own agricultural university in 1962 with three huge campuses at Ludhiana, Hissar and Palampur, to serve the needs of each of the state's three distinct agroclimatic regions.⁶ To speed up matters in other states, the Union government appointed a special Agricultural University Committee (subsequently known as the Cummings Committee) headed by Ralph Cummings of the Rockefeller Foundation. This body played a crucial role in winning over and persuading sceptical State officials, and in the remaining years of the 1960s the number of agricultural universities grew steadily. At present, the only state left out of the fold is Kashmir.

The steady numerical growth of the agricultural universities, however, cannot be taken to mean that all of them have developed along the lines charted out for them. In practice there has been many a slip between the cup and the lip. As matters are, those

⁵ Kathleen M. Propp, *The Establishment of Agricultural Universities in India*, University of Illinois, 1968.

⁶ On the importance of leadership, both political and administrative—Albert H. Moseman, *Agricultural Sciences for the Developing Nations*, A.A.A.S., 1964.

to agricultural colleges and universities.

A decade ago, the agricultural research scientist used to live in an "ivory tower". He had little or no contact with farmers, and his efforts bore little relation to their actual problems. Farmers on their part also tended to steer clear of research institutes, whereas today they throng the *kisan melas* held on agricultural campuses, bringing their own tents or sleeping on the floor in the corridors of university buildings.³

In the early 1960s the agricultural college used to be considered the last resort of students who wished to acquire a scientific degree but had failed to get admission to other, more "respectable" technical, medical or engineering institutes. Today, there are often ten to twenty times as many applicants for the undergraduate classes as there are places. K. C. Naik, Vice-Chancellor of the University of Agricultural Sciences in Mysore, reported in 1969 that there were 3,000 applicants for a class of 270. Even more striking is the appeal of these universities to women students. Not all agricultural universities have yet succeeded in setting up colleges of home science. But the few that have seem to have met with a ready response. In 1968, shortly after it began the College of Home Science on the campus of Punjab Agricultural University at Ludhiana had some difficulty in filling its vacancies. But in less than two years things changed drastically. By 1970 large numbers of women students, many of them from farm families, were applying. Now the competition is so keen that on "admissions day" they often arrive with half-a-dozen relatives in tow in the hope that their presence might help their chances of being selected.⁴

How has all this been achieved? The story began as long ago as 1948 when the Government of India appointed a University Education Commission headed by Dr. Radhakrishnan. Among the numerous recommendations made by this body was a plea for experimenting with a "new kind of educational institution," modelled on the lines of the land grant universities of the United States. This was the beginning of an idea which, twelve years later, was to result in action along lines that have provided the country with one of the most hopeful auguries for the continued progress of Indian agriculture.

³ *Indian Farming*, June 1971.

⁴ *The Times of India*, 14 June 1971.

states that have failed to adhere to the suggested pattern outnumber the ones that have conformed. Only four out of the fifteen existing agricultural universities can be described as really dynamic institutions.⁷ This might sound like a damning indictment. But, surprisingly enough, it is not.

The four universities which have been successful have developed strong links with the farming communities around them. The activities of their extension experts have, to the farmer's mind, come to be linked with the way to prosperity. They are recognized as "useful" institutions and the news is spreading fast.⁸ Farmers in those states in which the "green revolution" has progressed only up to a certain point and no further are beginning to connect two and two. In Maharashtra, for instance, Govind Talwalkar, editor of the widely read *Maharashtra Times*, reports that numerous progressive farmers are loud in lamenting the absence of a powerful institution like the U.P. Agricultural University. Many of them have been on officially sponsored trips to the campuses at Ludhiana and Pantnagar and have seen for themselves the valuable service that can be rendered by a good agricultural university. Much the same kind of "envy" is shared by the farmers of several other States with "backward" institutions as well. The pressure is building up and it hardly needs to be repeated that ambitious farmers acting in unison can command a powerful political voice. The very functional utility of the universities leaves room for hope that even the most lackadaisical state governments will soon be left with no option but to ensure that their institutions do not continue to be neglected.

There are many reasons for the continuing "backwardness" of a majority of these new institutions. The most important of these is the failure on the part of their state governments to attach adequate importance to the vital three-point extension-research-teaching principle, in spite of its obvious advantages. Apart from Uttar Pradesh, Punjab, Haryana and Mysore hardly any state has been serious about initiating the legislation required to make its agricultural universities the sole or principal local agent for all these functions. The absence of this dominating status can play havoc. Not till they acquire this status can the universi-

⁷ *The Times of India*, 23 June 1971.

⁸ Earliest recognition of usefulness reported by B. G. Verghese, *Design For Tomorrow*, Bombay, Bennett Coleman & Co., 1964.

ties begin to equip themselves with various specialist departments and laboratories. Not till they have acquired a wide range of highly developed faculties can they begin to provide specialized and effective services to farmers in the areas surrounding them. And until they can show their usefulness they stand slim chances of mobilizing public opinion and support, which alone can enable them to overcome the various bureaucratic and other obstacles that confront any growing institution in India.

This vicious circle has tended to keep them subjugated, in a position subordinated to the state departments of agriculture, which more often than not are keenly interested in preventing the growth of agricultural universities, for reasons that are not difficult to understand. A full-fledged campus clearly usurps many of the functions of the department. It detracts from its powers of patronage in dispensing specialized advice to farmers; very often it also takes over the distribution of scarce and much sought after inputs such as seed; and lastly the high academic qualifications expected of those who wish to fill senior positions in the universities would automatically result in the displacement or premature retirement of quite a few prominent career officials of the department of agriculture and this is a prospect which they quite naturally resist with great tenacity. Whenever the "agricultural establishment" has succeeded—either because of insufficient political commitment on the part of the state government to the idea of an integrated institution or because the vice-chancellor has been too weak to assert his interests—the agricultural university has remained stunted. In Orissa, the first vice-chancellor resigned in sheer disgust because he was able to initiate neither research nor extension on a significant scale and knew in advance that even after a decade the so-called university would in reality be no more than an enlarged teaching shop. In his case, the primary difficulty was getting the political leadership in Bhubaneswar to understand what exactly was at stake. It failed to grasp the importance of the underlying idea and consequently made itself a willing tool in the hands of officials with an entrenched bias in the state's department of agriculture.

In Rajasthan the Agricultural University at Udaipur has fared no better. It remains more or less what it originally was—a city-based non-resident college of agriculture. In this particular case, the political leadership was not even able to see anything

ridiculous in having a major agricultural research institution located in the middle of a city. And matters were not helped by the appointment of a founder vice-chancellor who was unable to make the leaders of the ruling party see light when they were incapable of doing so on their own.

The difficulties created by state governments have by no means been confined to indifference. Some of the universities have in fact suffered from an excess of interest on the part of political leaders. A striking case in point is the Mysore Agricultural University. This institution is an admirable one in every respect, except for its one special problem. To cater to the needs of the major linguistic areas of the state it has to maintain two separate campuses—one each for the Vokkaliga and Lingayat regions. And this has created acute staffing problems for its vice-chancellor. Each campus seems to be determined that its staff will consist exclusively of men and women who belong to its own area, regardless of the availability of talent, vacant positions and merit. This restriction on recruitment invariably leaves its mark on the quality of the staff.⁹ As far as extension is concerned, the insistence on local men can perhaps be justified but in the case of teaching and research it does tend to act as a damper on performance; and intense local political pressure makes it virtually impossible for the vice-chancellor to overcome the problem.

In contrast the universities at Panl Nagar (U.P.), Ludhiana (Punjab), Coimbatore (Tamil Nadu) and Hissar (Haryana) have established healthy traditions of recruitment from all over India. Their pool of scientists and teachers is as varied as that of the Indian Agricultural Research Institute (I.A.R.I.), which is an all-India institute. At all the four campuses quite a few very senior positions are occupied by men from states as far as away as Kerala. This does cause a small amount of resentment among "native" aspirants but compensation, in the form of dynamic programmes, is well worth the trouble as is evident from the services rendered to farmers by these campuses.

However, these problems are minor compared to the major one of getting the "wayward" states to accept the integrated teaching-research-extension approach to agricultural education. The

⁹ *On Linguistic Rivalries*—Ralph W. Cummings, Dean of Research, North Carolina, Special Address at P.A.U., October 1970.

basic soundness of this system can no longer be held in question. It is no coincidence that only those states (Punjab, Haryana, Tamil Nadu, Mysore, and U.P.) which have followed this pattern closely are now in a position to come to grips with the "second generation problems of the green revolution." Everywhere else, potentially ambitious farmers are realizing to their dismay that no matter what they do they can exploit the promise held out by the new technology only to a limited extent. They are being compelled to establish an equilibrium between investment and production at a lower level than is either necessary or desirable.¹⁰

The reason for this is not far to seek. An ample supply of inputs does not by itself lead to steadily rising levels of output. There comes a stage when there is little that farmers can achieve unless they have easy access to new knowledge, without which they cannot adjust inputs and cropping patterns to changing prices in ways that lead to a net increase in their profits. This is where they have been let down in those states which have failed to enact legislation making their universities exclusive local agents for teaching, research and extension education. The observance of three-point principle lies at the root of whatever success, for instance, the universities at Ludhiana and Pantnagar have achieved.

The part played by extension education in particular is crucial. It alone can ensure that both research workers and students remain in touch with the latest problems faced by farmers. Extension education in this context stands for a good deal more than the mere production of bulletins or brief articles which "take the results of agricultural research to the farmers." It involves the use of a group of distinctive teaching methods, including visits to the homes and fields of farmers, the organization of demonstration plots, collective meetings, block level farm tours, exhibitions and fairs. The benefits accruing from this kind of activity to the universities themselves are enormous. An agricultural scientist who is required to divide his time equally between extension, research and teaching is far more productive than one who remains confined to his laboratory or classroom. This is particularly true in a rapidly changing agriculture in which farmers have to cope with new problems every few months.

¹⁰ *The Times of India*, 8 March 1971.

A scientist who has no firsthand knowledge of these problems can neither adjust his research programmes in time nor provide his students with the all too vital footnotes which alone can bring up to date the precepts enunciated in standard textbooks. And a system of education which does not help the student to relate what he is being taught with the problems that he sees around him can hardly be called purposeful. A decade ago it was his isolation from the farmer which made the agricultural scientist in this country so ineffective. Sitting in his laboratory, he tended to produce model answers to various theoretical problems which were often quite unconnected with the farmer's resources or inclinations and therefore produced little impact. It was to end this isolation that the Cummings Committee insisted that the agricultural universities should be made the sole agents for extension education in their respective states in addition to being centres for research and teaching.

It is not just research and teaching which benefit as a result of being associated with extension activities. The extension worker himself becomes more effective when he is associated with a research centre. He cannot be very effective if he is trained only to observe problems in the field. Such observation is merely a prelude to learning the new answers to these problems. And this learning is best done through close and intimate day-to-day working contact with research scientists on a campus where he not only acquaints scientists with what he has observed but also absorbs whatever they have to offer by way of answers to the farmer's problems. There can be no escape from the fact that the land grant system, which combines extension, teaching and research under a single roof, is the simplest and most effective means of bringing about the vital and prompt transmission of ideas as amongst scientists, students and farmers.

The consequences for farmers in those states which have failed to make adequate institutional arrangements for such transmission are tragic. In the years ahead their predicament will become even worse. As output rises and prices decline their ability to make good profits will depend on their ability to cut down their costs of production. This is a far more complicated business than merely learning how to use a new high-yielding crop variety. In order to overhaul their management and investment patterns they will need more expert guidance at each step.

In certain states, like Madhya Pradesh and Maharashtra, the real reason for the failure to make proper arrangements is not political indifference. The trouble in these states is that they already had a series of old and well established colleges of agriculture which could not be abolished. Most of these colleges are based on the 150-year-old tradition of teaching with textbooks, prepared lectures and periodical academic examinations and little else. These institutions had to be accommodated into the new framework and Maharashtra decided to take the easy way out by merely grouping them together and providing them with new designations. They were converted overnight into constituent parts of the new Agricultural University which in fact thus turned out to be no more than a new centralized administrative unit with the old institutions as its new affiliated parts. The splitting of one Agricultural University into four has in no way solved the problem. If any thing, it has further complicated an already difficult situation.

The result can only be called unwholesome. Some of these colleges are admittedly fine institutions. But the majority—and not just in Maharashtra—are of very poor calibre. As a result, wherever the new universities have had to take over such components they have also been saddled with all their drawbacks. And there is little that can be done to set matters right, till the old and superannuated teachers retire and are replaced with younger men who are better attuned to the problems of a changing and dynamic agriculture.

The damage done by this kind of "take over" is best illustrated with a few examples. At one such college (not in Maharashtra) the department of animal sciences used to teach its students until recently the anatomy of milch cows with the aid of a retired and redundant stud-bull borrowed from the local district board, with a cloth bag strung over its genitals and made to look like a pair of udders. At yet another, the potato agronomy experiments were conducted with round white pebbles arranged in geometrical order on a flower-bed five feet by five feet just outside the "agronomy professor's" classroom.

In comparison with these dismal colleges the more dynamic campuses are fast growing into formidable institutions. They almost overshadow the local departments of agriculture, which were previously all-powerful. The Punjab Agricultural University,

for instance, is now planning to set up its own radio transmitter station, so that it can provide farmers with hour-to-hour advice in busy seasons without having to send specialists all the way to Jullundur, where All India Radio's local station is located. Yet another proposal is to persuade farmers who benefit from the university to contribute to its research budget.¹¹ As it is, several *panchayat samitis* and *zila parishads* in the state have in the recent past offered voluntarily to foot the printing bills of the university. And there are instances on record when busloads of farmers have driven to the campus to honour scientists with garlands made of rupee notes as a token both of their gratitude and of their recognition that scientists, with meagre salaries, are rendering services that deserve to be more handsomely rewarded. The impact of this social response on the morale of the average campus don is enormous. It provides him with tangible proof of his own worth, encouraging him to attempt still higher standards.¹²

The junior most associate professor from the university moves about in Ludhiana district these days with the style of a local hero. Village worthies, local M.L.A.s and even district officials are quite frankly anxious to be seen moving about in his company, in order that they can claim some of the credit for his presence in the local community. All of which is a far cry from the state of affairs a decade ago when scientists and extension workers found it necessary to chase and buttonhole farmers, and not the other way around.

There is a danger in all this too. A successful university with easy access to farmers provides the politician with readymade and prestigious channels of communications. And there are signs that he is finding the temptation to exploit them too strong to resist. As the university becomes more powerful and takes over the functions of the department of agriculture the politician quite naturally develops a vested interest in having a say in its affairs. This urge generally leads to interference in crucial appointments, the growth of campus factions and all the other evils that follow. The anxiety on the part of vice-chancellors to curb such interference has been given pointed expression in both

¹¹ Proposal made at Agricultural Universities Convention, Pantnagar, April, 1971.

¹² *Indian Farming*, June 1971.

private conversations and public utterances on numerous occasions. There is thus a strong case for strengthening the autonomy of the agricultural universities with a view to making them more independent.¹³

A significant step in this direction was taken with the petition submitted to the Union Minister for Food and Agriculture by the Indian Association of Agricultural Universities in December 1969. Heavy emphasis was laid on the need to make the Indian Council of Agricultural Research (ICAR) into a statutory UGC-type body with independent decision-making powers. At present, the ICAR, which is responsible for distributing central funds between the different agricultural universities, is neither "inside" the government nor "outside" it. It is an adjunct of the Ministry of Food and Agriculture. This anomalous position in many ways prevents it from doing full justice to the heavy responsibilities entrusted to it. It is expected to play a key role at the national level in the formulation and coordination of India's agricultural research policies and programmes. The Education Commission too has strongly recommended its conversion into a UGC-style body, with an autonomous statutory status as well as adequate resources.

From the point of view of the agricultural universities the disadvantages of its present position are all too obvious. As matters are, the ICAR is under heavy political pressure to ensure that the funds earmarked for agricultural education are equally distributed among all the states. With the growth in the number of universities and the less than proportionate increase in available funds, this has led to a reduction in the amount placed at the disposal of each. The result is that the better universities with a demonstrated ability to put money to good use are now in danger of receiving no more than what is given to the backward institutions which are still in no position to spend higher allocations in any useful way.¹⁴ And to make matters worse, the ICAR has no power at present to bring the errant states to heel. It cannot withhold funds. It can only bleat from time to time to draw the attention of state governments to mistakes which they are under no obligation to rectify. And so the drift continues.

¹³ Agricultural Universities Convention, April 1971.

¹⁴ K. C. Naik, Vice Chancellor, Mysore Agricultural University, at the Agricultural Universities Convention April 1971.

The central government has of course all along been aware of the uneven progress made by the agricultural universities in the different states. But it has so far turned a blind eye. A marked change in its attitude, however, now seems to be in the offing. In a speech delivered at the annual general meeting of the ICAR (June 1971) Fakhruddin Ali Ahmed, the Union Minister for Food and Agriculture, went out of his way to do some plain speaking in favour of the successful states, whilst drawing pointed attention to those that have failed to promote legislation aimed at bringing their universities in line with the recommended pattern. This was a major departure from the strange silence with which the Ministry of Agriculture has customarily dealt with the subject. There was no hint whatsoever of a threat to cut off funds in the event of a failure to toe the line on the part of the errant states. But the Government authorities could have applied effective pressure.

The very fact that the Agriculture Ministry, armed with the demonstrable success of the better universities, felt confident of criticizing the states on a subject which is strictly their responsibility—and of which they are ever keen to remind the centre—is a hopeful sign. It can only be a matter of time before their agitated farmers too join the chorus and bring pressure to bear on the state capitals compelling them to shake off their apathy and sweep aside the pettifogging objections of vested bureaucratic interests.

Higher Education and the Teaching of Teachers

S. SHUKLA

In the Indian University system few recognize the need for formal, or even informal, preparation for the teaching profession. Elementary teacher training has always been conducted by state departments of education and no bachelor of education programmes related to elementary education exist. Teachers of the handicapped or in special fields like art have also not received university training. Only secondary teachers and those teaching in some related higher institutions have gone through specific pedagogical programmes connected with India's universities. Even this minimal commitment to teacher training is a relatively recent development beginning with the recommendation of the Sadler Commission of Calcutta University (1917-1919) that a one-year Bachelor of Training (B.T.) to train university graduates to become secondary teachers be instituted.

Teacher training, despite attempts to affiliate it with universities, has a strong tradition of being controlled by state governments. The states not only administer teacher training institutions, they also set the syllabi for them and conduct examinations for their evaluation. In many states, the diploma awarded by the state education department carries greater prestige and value as preparation for secondary school teaching than a university certificate. With the passage of time, much of this training has formally come within the purview of the universities, though it is still controlled

by the states. The powers of administration, appointment of faculty, etc., of the training colleges rests in the hands of the state education departments which are the most important employers of the teachers trained and which, in many cases, even manage the colleges themselves. The committees of courses and examining procedures connected with teacher training institutions have often been staffed, even within the universities, by officials of the state education departments. In recent years, the establishment of faculties of education within the universities has accentuated the separation of teacher education from the mainstream of higher education, despite the attempts to bring it into closer interaction with other academic disciplines.

The teaching of teachers thus is still only nominally an element of the university system. This is often expressed physically in the distance which separates the teacher training college from the university to which it is affiliated. Even in some of the major teaching universities, where training colleges, renamed departments of education, were started by the universities themselves, the college is located at an extremity of the campus. The phrase "academic ghetto" seems not too far-fetched a description of the state of teacher education within the university.

Students and Faculty

Many observers have noticed the poor quality of the student body in teacher-training colleges, even though there is keen competition for admission in the better established urban institutions. A recent survey conducted by the Planning Commission showed that of the 20,000 odd students in over 250 teacher-training institutions, only about 20 per cent were first or second class degree holders. The picture is, of course, variable. Many able women of high social standing and ability enter teacher education institutions, particularly in larger cities. To many of them, this serves merely to fill the interim period of waiting for marriage or to insure against future difficulties. What is more, either their professional life is shortlived or they delay entry into the profession.

The male student is often older and has already tried some other occupation. Some have even taught and decided to teach professionally. Generally, the male student comes from lower socio-economic groups and ability levels than the women students.

In a highly selective teacher-education institution in a metropolitan city, 75 per cent of the students selected on the basis of common tests of intelligence and aptitude were women and only 25 per cent were men. The fact is easily explained, for most women do not have as high occupational aspirations as their abilities would justify and find a teaching career consistent with matrimonial duties. Alongwith the generally low ability and social levels of male students, this difference in student characteristics by sex has implications for the methods and social climate even of the most progressive teacher education institution. Many of these institutions are segregated by sex. But in the mixed ones, wholesome exposure to the opposite sex is inhibited because of social class differences, with the male students generally coming from the lower socio-economic levels than the females.

The staffs of teacher-training institutions managed by state governments develop, typically, out of the staffs of Government-run secondary schools. This is a routine rung in the career ladder of government secondary school teachers, who, while they may ultimately aspire to be higher level administrators of the state system of education, are strongly committed to secondary education. There is little or no professional training of teacher educators. People who come into the field tend to stay in it, but they are not committed to the study of education or the education of educators. Thus, no clear-cut discipline has emerged, neither has a reference group arisen for teacher educators. As a result, professionalism has been minimal.

In general, the education faculty is academically and socially inferior to their counterparts in the "liberal" departments of the university or in the other professional training institutions, e.g. medicine, engineering or technology. The problems of staffing teacher education institutions are wellknown. Scholars in academic disciplines corresponding to a school subject—e.g. history or physics or literature—seldom take professional or academic interest in teacher education. The teaching skills and knowledge of the social and behavioural sciences related to education, in addition to subject-matter competence, are desirable in a teacher educator. For the most part, a lecturer in methods of teaching a school subject is usually deficient in one of these areas. The difficulty of finding qualified teacher educators is aggravated by the fact that higher academic ranking (and later higher

positions) even within education or teacher education departments go to the teachers of "education" subjects, e.g. educational foundationers or principles. The teachers' college thus has little that is creative to offer in terms of teaching methods while its contribution to other aspects of educational thought remains in doubt.

In the past the typical teacher education institution was a very authoritarian place. It was a world of rigid, bookish external examinations of largely irrelevant and theoretical learning; even more rigid enforcement of a regimen of daily living and school teaching and almost totalitarian authority of the faculty—particularly regarding evaluation and future placement. Such a milieu produced teachers ideally suited to the bureaucratic machine in the days of British rule. Methods perfected then have persisted because they were the ones best known to teacher educators and their administrators. Neither greater knowledge nor democratization of the state has led to a carefully designed, theoretically cohesive, alternative set of procedures. As numbers have increased and the capacity of administration to cope with students' restiveness has diminished, old procedures have merely been less rigorously implemented. The modification is thus as much by default as by design.

Post-Independence Changes

But all this is perhaps too gloomy and even an unfair view of the situation. Over the past twenty years basic reform has been attempted. The reforms emanated out of a general recognition that school instruction was too bookish, authoritarian and dominated by external examinations. Except in the elite public schools which did not hire teachers with a professional training and in a few other schools, the opportunity for the child's development in the social and non-cognitive areas was small. The Secondary Education Commission (1955) strongly urged a broader educational effort in the secondary school and the use of dynamic teaching methods based on student activity and initiative. The Commission also proposed a substantially new type of secondary school organization, namely a multi-purpose school that included many liberal and pre-vocational streams. The Commission's recommendations had far-reaching implications for teacher education. Teachers, for example, would have to be prepared

to teach a wider range of subjects and to take on many new responsibilities like guidance, extra-curricular activities, etc.

These new demands necessitated a different type of teacher education programme, and a four-year course combining the student's undergraduate courses with his "professional" studies was initiated. The difficulties entailed in finding qualified teachers for the "non-liberal" options in the multipurpose secondary schools underscored the need for a four-year B.Ed. course combining professional courses in education with those in agriculture, commerce, fine arts and other fields. Four Regional Colleges of Education were founded by the National Council of Educational Research and Training and were administratively placed outside the university system although they maintained academic affiliation with them. An earlier attempt to institute the four-year B.Ed. was made in the Government College of Education at Kurukshetra (Haryana) with the handicap, however, of being staffed by lower paid faculty than that in the university to which it was affiliated. In these cases, the costs were high by standards prevalent in the country. The quality of students and faculty of these colleges was often unfairly compared with that of the universities and their departments rather than with the previously dominant one-year B.Ed. programme or with the average affiliated degree college.

The trend to four-year teacher education has reversed itself. The Education Commission (1964-66) recommended that the bulk of teacher-training be concentrated in one-year courses and the Review Committee of the National Council of Educational Research and Training in 1968 asked that four-year programmes at the Regional Colleges of Education be curtailed and their facilities be used for experimentation and in-service teacher education. The Education Commission's recommendations overlooked the significance and potential of many innovations initiated by the regional colleges such as the internship in teaching which could well develop deeper and broader understanding of the teaching process than provided for in the one-year B. Ed.; and the possibility for professional specialization in education and the evolution of approaches to the teaching of humanities, sciences and the social sciences that the leadership of and climate in the regional colleges foster.

In this controversy between the one and the four-year B. Ed.

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The change in conception of the educational task, for didactic teaching and authoritarian upbringing to teaching-learning over the entire range of the cognitive domain, with particular stress on thinking has challenged educators everywhere and teacher educators particularly. It is no longer enough to prepare teachers to "fit into" the school system as it exists. They have to be prepared for a new and different practice of pedagogy. The theoretical basis for the new pedagogy has, of necessity, to be more profound and intelligible than at present so as to supply elements of conviction, and capacity for innovation within an existing outdated school system. Somewhere along the line, the assets of tact and persistence essential to innovative educational/pedagogical statemanship are also needed. When substantial educational change occurs, it is usually caused by changes in other objective social factors like technological innovation as in the West or technological-cum-social system change as in the democratic United States or the socialist USSR. Teacher education becomes a link in a mutually reinforcing chain of change. Progressive (Deweyan) pedagogy in the United States or the polytechnical one in the USSR began in the teachers' colleges and was reinforced by a feedback from society as well as from technology. In India, pedagogical changes are supported more by changes at the subjective level—in the wishes and even theoretical convictions of educators—than in technology or the social or political system.

Some efforts are being made in many better schools to adopt newer methods. But, essentially, the best in teacher education is at war with the vast bulk of outmoded practices in a sprawling and fast expanding school system where, each year, for every school that might adopt a new and progressive practice, a few are being established at primitive levels of pedagogy. In principle, it should be possible for the system to skip this stage of educational development. Each new school should be a new school educa-

programmes, there is much room for eclecticism and pragmatism which, unfortunately, has not yet happened. In theory, it should be possible to devise courses for persons willing to commit themselves to a teaching career at many different points in their lives. Thus, a four-year programme could be available to those who opt for teaching at the beginning of a college course and a one-year programme could exist for those who want training at the close of a degree course. In addition, course work and elements of professional practice could be offered within the first degree programme during term-time as well as during vacations. The relative rigidity of the Indian university in its degree specifications thwarts development in this direction. Were it possible to acquire credits on a course-unit basis as in the American university system, a teacher-education course could be designed for a wide variety of situations. These programmes could then attract more able students than those that currently enter them.

Another trend in teacher training has been the development of correspondence courses. In pursuance of the report of the working group of the National Council of Educational Research and Training on the subject (1964), the four regional colleges of education and the Central Institute of Education at Delhi, as well as a few university departments of education have been providing correspondence lessons in theoretical subjects that lead to examinations for the B. Ed. degree. This has been confined to working teachers and much effort goes into offering a summer institute at the college concerned, arranging practical work in schools and supervising such students' studies to ensure that their preparation is equivalent to that of full-time students.

Because of recent trends in education internationally, particularly in the United States and the Soviet Union, to emphasize "disciplines" or subject matter "content", one-year courses and summer institutes have been introduced in specific disciplines taught in the schools, notably in science and mathematics. These courses have emerged as distinct entities since it proved impossible to accommodate this type of training in the one-year B. Ed. programme. The impact of this effort on the school system is not yet known.

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innovation derives from the foregoing. So long as the concerns of real school practice and/or scholarly enquiry and enterprise are not considered within the province of universities, the only alternatives for academia are within the domain of the trivial and the ineffectual.

Advanced Teaching and Research in Education

It may be useful now to examine more explicitly the efforts in advanced teaching and research in education which, in principle, should help link teacher education with higher education. A Master of Education course, generally of one academic year duration, has gradually been instituted in most universities. There have been few occupational openings and, until recently, few other incentives have existed to entice students to pursue the master's degree. Many universities require a certain amount of teaching experience in addition to the B.Ed. degree for admission. Most employers give holders of the master's degree some preference in administrative and supervisory appointments. Thus, motivation for the degree is weak and has grown only as a surplus of B.Ed.s has tended to make holding the M.Ed. degree an advantage in obtaining routine teaching appointments. This somewhat extended discussion of the mundane bases of advanced study of education explains some of the dilemmas in the field. On purely academic grounds, most academics prefer a two-year master's degree. Institutions like Calcutta and Gauhati have even enforced it. In several cases, an M.A. course in education following upon B.A./B.Sc. without B.Ed. has been planned so as to provide broader theoretical bases for students. In this, as well as in the more common M.Ed. course, there have been differences over the merits of a "specialist" orientation versus a liberal or task-oriented emphasis. The latter stresses philosophy, sociology and psychology of education and offers a limited introduction to an applied area such as guidance or administration. The former minimizes the core (less than half of the programme) while emphasizing an elective major such as psychological services, administration, or other applied fields.

Teacher education is faced with substantial immediate difficulties also. Some of these problems are that adequately trained scholars in the foundation disciplines have not always been attracted to the field and adequate expertise of practical service areas such as

tionally, with properly prepared teachers using new techniques and equipment. This would require increased resources, both intellectual and financial, many times more than the current effort in the field.

What is the relevance of many of the pedagogic reforms proposed in teacher education—educational and vocational guidance, for instance—to the Indian educational reality? To answer this question and to perform the corresponding constructive task of devising techniques that do really apply, the academic community as a whole will have to be involved. Those involved in teacher training alone cannot do the job. First, a “theory” of education beginning at a purely analytical or descriptive level is needed. Further, relevant educational techniques—some of which can be adapted from other countries—should be devised. Such efforts will place strains on the university system which is ill-equipped to meet the challenge. This is due partly to the weakness of social sciences in India and partly to the university’s disinclination for “applied” tasks and its preference for the analytical and the “theoretical”. The rigid organizational structure of the university—which cannot even provide seminars or interdepartmental appointments of faculty—discourages productive interaction between disciplines. Organizational devices such as interdisciplinary centres outside the university further prevent dissemination of research results to places where teachers are trained. The proposal for schools of education in universities, suggested by the Education Commission (1964-1966), may provide some answers. But the talent and effort already absorbed in the somewhat more bureaucratized, though more purposive, quasi-government agencies, *e.g.* the NCERT and the state institutes of education, leave little in the way of resources for investment in these schools and little room for purposeful initiatives by universities.

Educationists within the universities also inhibit the university from providing leadership in educational innovation. Unlike medicine and engineering whose professional self-image is high, teacher education models itself on the liberal disciplines of the university. In this ideal self-image, the place for involvement with schools and actual teaching tasks to develop a theory and a technology of education is difficult for departments of education or for other social scientists in the university context.

The academic-organizational climate resisting educational

innovation derives from the foregoing. So long as the concerns of real school practice and/or scholarly enquiry and enterprise are not considered within the province of universities, the only alternatives for academia are within the domain of the trivial and the ineffectual.

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guidance and administration have not been developed either at the theoretical level or through involvement in consultancy with the school system. In addition, indigenous bases of research and knowledge in most areas are only now being developed and adequate data are still lacking in many areas.

Conclusion

The past decade has, in retrospect, been one of feverish activity in the development of more adequate teacher education programmes and increasing initiatives in university departments of education. University involvement in teacher education has heralded a swing away from a traditional pedagogy to the disciplines. As this excessive swing of the pendulum corrects itself and some balance and perspective in educational studies is restored, one can expect the development of more meaningful postgraduate programmes in education. This, in turn, could mean better teacher education either through better books or through better trained faculty or both.

The university can enrich teacher education mainly because other disciplines that can strengthen future teachers' knowledge of the subject matter base that they are to teach are taught in the universities. At the same time, teacher education has the potential to stimulate new directions in the disciplines. Educationists' competence in educational measurement and examinations, their insights into teaching processes and curriculum organization can be used profitably in higher education, particularly at the first degree level.

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Bibliography on Indian Higher Education

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This bibliography seeks to provide the reader with as complete a listing of books and articles on Indian higher education published in English as possible.

Items considered insignificant have been omitted as have dissertations and theses. Materials of special importance are starred (*). Materials are listed alphabetically, with books first and periodical sources following, under two broad categories, higher education and students.

HIGHER EDUCATION

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